COMPUTERWORLD

Browser rouser

Market leader Netscape sees Microsoft in rearview mirror

By Kim S. Nash and Gary H. Anthes

Netscape's plea for Department of Justice backup in its browser war against Microsoft could mean Netscape is running 'scared,' some users and analysts said.

Indeed, Netscape Communications Corp. may have reason to be concerned.

An exclusive survey of information systems professionals conducted by Computerworld, Inc.'s research division found that Microsoft Corp. is quickly gaining downward ground on its rival.

Twelve percent of respondents said Microsoft's **Browser rouser, page 16**

BASE: 279   394   227

Source: Computerworld Research

Windows 95 may be just a passing fancy

By April Jacobs and Laura DiDio

On its first anniversary, the most hyped operating system in history has made itself a household name. But it's having a harder time convincing corporate America that it's a keeper.

Windows 95 is no slouch; Microsoft Corp. is expected to ship 45.7 million units this year. But analysts have recently downgraded their sales projections ahead of Microsoft's message that Windows 95 is a pit stop on the way to Windows NT. NT 4.0 is shipping now.

"Some of these companies are coming back and saying, 'It's a dose I don't need to step on,' " said Chris

Le Tocq, director of software research at Dataquest, a market research firm in San Jose, Calif. **Windows 95, page 14**

Windows 95's performance report card

A	57%
B	
C	
D	
E	
F	

Base: 100 Windows 95 users

Source: Computerworld survey

Rmon phenomenon: Sales up, usage isn't

By Patrick Dryden

Few users seem to get full value from the Remote Monitoring tools they demand in their internetworking products.

Many administrators, fearful of performance problems or lacking Rmon experts on staff, never even try the Rmon agent software or modules embedded in their hubs, switches and routers.

Others, caught on the treadmill of reactive management, rely on Rmon in those devices only for troubleshooting.

"About 98% of organizations don't use all the network management they've bought inside these devices because they still spend all their time putting out fires," said Michael Howard, president of Infonetics Research, Inc. in San Jose, Calif.

Rmon phenomenon, page 115

Remote Monitoring

NT workstations nip at Unix heels

By Jaikumar Vijayan

First came the personal computer. Now comes the personal workstation

in what analysts view as the harbinger of a new class of computers. Hewlett-Packard Co. this week will announce powerful Windows NT workstations based on Intel

Corp.'s 180- and 200-MHz Pentium Pro chips.

The systems target engineering, mechanical design, three-dimensional animation and scientific applications markets and pack enough horsepower to give some low-end Unix boxes a run for their money, analysts said.

"There's been this myth kicked around the industry that the only real workstations are Unix workstations. That's about to be challenged," said James Garden, an NT workstations, page 115

HP's Personal Workstations

HP's NT workstations include the following:
- Windows NT 4.0
- Pentium Pro, 180- or 200-MHz chips
- 32M- to 1.5G-byte hard disk
- 1.6G-byte hard disk
- Visualize graphics, multimedia and built-in networking
- Starting prices: Around $4,000

WHAT'S INSIDE

- Computer Associates will announce Windows NT versions of seven systems management products at CA-World '96 in New Orleans this week. See story, page 6, by Bob Francis.

- SAP AG will show units in Philadelphia this week how it plans to split its R/3 enterprise software into components. See story, page 8, by Julie King.

- The remote computing race heats up. See In Depth, page 90.

- How IS can play a lead role in intranet deployment. See our pullout magazine, Computerworld Intranets, following page 32.

COMPUTERWORLD

News updates, features, forums www.com_____

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Largely, percent of respondents said Microsoft

Browser rouser, page 16

Who is your primary Web browser vendor?

	May	June	July
Netscape	78.5%	74.9%	76.3%
Microsoft	6.8%	9.9%	12.8%

BASE ___   ___   ___

Windows 95 may be just a passing fancy

By Sped Lavalley and Laura DiDio

Two its first anniversary, the most hyped operating system in history has made itself a household name. But it's having a harder time convincing corporate America that it's a keeper.

Windows 95 is no shoofly. Microsoft Corp. is expected to ship 1.5 million units this year. But analysts flatly recently "downgraded their expectations." And many of Microsoft's own assure that Windows 95 is a pit-stop on the way to Windows NT 5.0's shipping next...

"Some of these companies are coming back next spring. It's a zoo," Liburti said in to sign up," said Chris

In what analysts view as the harbinger of a new class of computers, Hewlett-Packard Co. this week will announce powerful Windows NT workstations based on Intel...

Windows 95's performance report card

| 17% |
| 64% |
| 14% |
| 3% |
| 2% |

... for analysts of software research at Dataquest, a market research firm in San Jose, Calif.

Windows 95, page 11

Rmon phenomenon: Sales up, usage isn't

By Patrick Dryden

Users users won't just fall away from the Remote Monitoring protocols they demand in their internetworking products.

Many administrators, learned of performance problems or lacking Rmon experts say staff, never even try the Rmon agent software or modules embedded in their hubs, switches and routers.

Others, caught on the treadmill of reactive management, rely on Rmon at those devices only for troubleshooting.

"About 35% of organizations don't use all the network rmon, memory they've bought inside the software because they can do it all and spend all their min-output on this," said Michael Howard, president of Infonetics Research Inc. in San Jose, Calif.

Rmon phenomenon, page 15

Remote Monitoring

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By Johanna Ambrosio

First came the personal computer. Now comes the personal workstation.

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The systems target engineering, mechanical design, three-dimensional animation and scientific applications markets and pack enough horsepower to play some low-end Unix boxes a run for their money, analysts said.

"They've been this niftily kicked around the analogy that this makes NT workstations are 1 in a workstation." Dan Johnson of the dual board," said James Garde, an

NT workstations, page 15

HP's Personal Workstation

HP's NT workstations include the following: 180-to-180 Pentium Pro, up to 3.5M bytes of RAM, Windows NT 4.0, HP's visualize graphics, multimedia and built-in networking. Starting price: Around $5,000.

Ready, set, 'net

By ...

W ith Internet frenzy at a fever pitch, my brother is anxious to join the millions who surf the 'net and E-mail themselves silly. So Garry was delighted when a guy at his church offered to sell him a $100 PC — an Intel 286. "What do I need to fix this thing up to surf the 'net?" he asked. A miracle, unfortunately.

Garry manages a carpet store in upstate New York, and like millions of other folks, he doesn't need Windows 95 or fancy applications. He just wants to cruise and schmooze online.

I thought of Garry when I entered a room full of network computers and 'net appliances at last week's SCO Forum, an annual "gathering of Unix faithful in Santa Cruz, Calif. Among the 14 products on display was "On TV Consumer Internet Service" from ViewCall America in Norcross, Ga. (info@ viewcallamerica.com). The service offers Web browsing and E-mail capabilities for about $300, plus a monthly fee to a 'net service provider. Such a thing would have seemed peculiar last year, but what a difference 12 months has made. Last summer, the industry was in a tizzy over Windows 95 (see our story, page 1).

All those nightmares of Microsoft dominating seem like no more than a touch of indigestion now. There was little angst among the 3,000 Unix vendors, resellers and IS managers in Santa Cruz last week. They were serene in the knowledge that their bets have long been placed on the open standards and protocols underlying the 'net. Those standards, with the addition of Sun's Java programming language and its write-once-run-on-many-platforms capabilities, will make the network computer a viable and economically compelling choice for many firms.

"The Internet is the biggest non system in the world," said SCO President Doug Michels, "and the network computer will carry the Internet to the desktop and into the living room."

I know how I'll judge whether Michels has it right or not: When Garry fires off that first E-mail message from the comfort of his own couch.

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The 5th Wave by Rich Tennant

Internet: the5thwave@tiac.net

THE GENIE in the MACHINE

"YES, IT'S NORMALLY LARGER AND MORE AWE-INSPIRING, BUT THIS IS ONLY A 4MB SYSTEM!"

Fax tool kills the messenger

By Stewart Deck

Open Port Technology will deliver a product this week that eliminates one of the least high-tech processes in offices today — hand-delivering faxes.

Open Port AFD, an automatic fax distributor, is aimed at businesses that have a lot of incoming faxes that need to be processed quickly.

Open Port AFD electronically distributes faxes to individual data-entry queues where individuals process them in a first-in, first-out order. This eliminates the "sneakernet" method of manual fax delivery. Pricing for the system starts at $50,000. A large financial institution in the Midwest has signed up to use Open Port AFD to help handle the 30,000 to 40,000 pages of fixed credit and loan applications it receives each month.

'Sneakernet' no more

According to the firm's vice president of administrative systems, the institution wanted to eliminate paper and the firm's exhausting "Nike network" of messengers who run back and forth between fax machines and the data-entry center. The runners sometimes misdelivered and lost faxes or lingered too long around the water-cooler with crucial faxes.

Especially attractive to the company is a feature that uses a split screen to place an image of the fax next to the data-entry form. The fax image slowly scrolls by at a specified pace.

"This [product] is a big step forward in fax technology, and the technology here is the important key to this application," said Peter Davidson, a fax industry analyst at Davidson Consulting in Burbank, Calif.

"A lot of companies are interested in automating the fax receiving process," Davidson said. "Until now, all of the pieces weren't in one place to do it."

News Shorts

Oracle8 goes into beta

Four years after starting development of a version of its database that blends relational and object technologies, Oracle Corp. is now finally starting to beta-test Oracle8. But sources said the software isn't expected to ship until the first half of next year. Oracle officials were mum about delivery plans. Oracle8 is accompanied by an object-oriented development environment code-named Sedona.

WAN tool kit ships

StampBrook Software, Inc. in Bohemia, N.Y., this week plans to ship a suite of wide-area network management tools that run on a 32-bit Windows platform. Intra-Net Manager can discover, map and manage devices supported by Simple Network Management Protocol as well as frame-relay and Integrated Services Digital Network (ISDN) connections. It also collects and analyzes historical performance data. It costs $1,995.

Compaq cuts PC prices

Compaq Computer Corp. in Houston last week dropped the price of its commercial desktop systems by up to 22%. The price of its outgoing ProLinea 5100 dropped from $1,849 to $1,439. Older-model Deskpros also took a whack; the price of a 133-MHz Intel Corp. Pentium-based system dropped from $2,129 to $1,799. The price of a 150-MHz Pentium system dropped from $2,289 to $2,029.

Dell preps servers

Dell Computer Corp. in Austin, Texas, will introduce its first servers based on Intel Corp. Pentium Pro chips Sept. 9, sources close to the company said. The PowerEdge line will consist of entry-level and midrange servers with single- and dual-processor capabilities, sources said. Quad-processor systems will be announced later this year or early next year.

Informix targets Sybase

In the kick-'em-while-they're-down category, Informix Software, Inc. recently began to offer trade-in credits to customers who migrate from Sybase, Inc.'s SQL Server database to Informix' On-Line Dynamic Server. Informix is also offering a migration tool kit and consulting services to try to pry customers away from Sybase.

Gateway aids ISDN

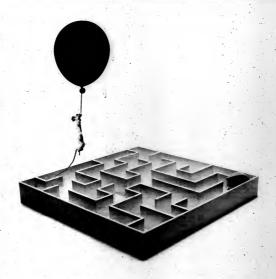First Virtual Corp. this week will unveil a gateway that lets a large number of users share a few Integrated Services Digital Network (ISDN) lines for desktop video-conferencing. The V-Gate 3000 is a gateway between Asynchronous Transfer Mode (ATM) pipes and ISDN lines that basically removes the need to run expensive ISDN lines to each desktop. The gateway costs $12,000 for either 25M-bit ATM or Primary Rate Interface connections.

IBM ships DB2 for SCO

IBM last week began to ship the distributed version of its DB2 relational database on SCO, Inc.'s OpenServer operating system. A five-user license costs $1,595; additional licenses cost $149 per user. IBM also said it will start beta shipments this month of an SCO version of its Net.Data data access tool for World Wide Web browsers. Net.Data, which already supports OS/2, AIX and Windows NT, can also be used to Web-enable applications.

SHORT TAKES The American Stock Exchange has introduced the Amex Options Display Book, a fully automated electronic system that was designed to replace the paper books used by options specialists. ... NetPro Computing, Inc. is shipping Version 2.0 of Server ScanMaster for Banyan Vines, antivirus software that scans electronic-mail message attachments in Banyan Systems, Inc. networks. It costs $899 per server. ... Bay Networks, Inc. last week announced a lifetime warranty for its widely used Models 800, 2700, 2800 and 2900 series Token Ring, Ethernet and Fiber Distributed Data Interface hubs and its BayStack 10Base-T Ethernet Stackable Hubs.

Choice Cuts

PC LAN management suite offerings come together as IS wrestles with the LAN management monster. Buyer's Guide, page 81

Easy does it: *You don't have to play security cop to get users to keep data under lock and key. A little nudging goes a long way.* Managing, page 74

IBM foggy on San Francisco ship dates

By Sharon Gaudin
SAN JOSE, CALIF.

IBM is building a series of object frameworks to give developers a common base for developing industry-specific applications.

The initiative, dubbed the San Francisco Project, was designed to offer an infrastructure for object-oriented applications in a distributed environment, explained John Slitz Jr., vice president of object technology marketing at the IBM Software Group.

Slitz said the frameworks, which are being written in Java, are still in development, and he couldn't say when they will be ready.

Ready or not, it's good news coming down the object pike, said John Strand, director of technology planning and integration at Sprint Corp. in Overland Park, Kan.

"At the business level, doing applications without having to deal with so much code directly would be useful," Strand said. "Any new way to enhance the development of object-oriented applications is welcome. The sooner we get there, though, the better."

IBM made the framework announcement here at Object World West last week.

A framework is a predefined architecture that contains a collection of several classes of objects. A developer can take a framework for a certain industry and simply add more specific objects to customize it.

The San Francisco Project would develop a standard base

IBM's announcement of object frameworks was a hit at Object World West

across different industries.

The frameworks are aimed at business applications such as general ledger, accounts payable and inventory control.

Karen Boucher, an analyst at The Standish Group International, Inc. in Dennis, Mass., said the initiative could be important if it actually produces useful architectures. She pointed out that there are already frameworks for different vertical applications, but there isn't a standard for those verticals.

Nuts and bolts

The hardest part of doing a framework is how the demo thing is architected," Boucher said. "How do you connect everything? How do you set it up? This would make that process easier because they don't have to create the architecture."

Barry Christian, president of International Business Systems (IBS) in Folsom, Calif., said a majority of time his people spend building object-oriented applications is focused on the nuts and bolts, which a standard framework would alleviate. IBS builds business applications

"We spend a lot of time writing the exact same pieces of code. We'll take that code from this initiative and build on top of it the elements that make us unique," said Christian, whose firm has been collaborating on the project with IBM and JBA International, an integrated business solutions provider.

IBM is working on the initiative with approximately 50 other software vendors. Slitz said he is opening the door to other collaborations.

Stakes high for objects

Companies including IBM, Netscape Communications Corp. and Sun Microsystems, Inc. are betting heavily that object technology will pick up speed.

Sun and IBM announced at Object World West last week that they have joined forces to enable users to connect existing enterprise applications to the Internet and private intranets.

"It's a world of multiple systems, and they've all got to talk to each other," said Steve Mills, general manager at IBM's Software Solutions division. "People don't want to worry about the plumbing. They want to know they can get connection."

IBM is licensing Sun's Joe,

a Java-based client connectivity product, Joe, which was released earlier this year, was designed to let businesses deliver corporate applications to any platform that supports the Java programming language.

Sun will license class libraries, including IBM's MQSeries messaging system, which manages communications among applications that run in different environments.

IBM also is working on a version of its CICS transaction processing monitor for Sun's Solaris operating system.

And Netscape's co-founder, Marc Andreessen, threw his weight behind objects during a late-week keynote address in which he called object technology the next wave to wash over the industry. He also announced that Netscape had joined the Object Management Group, a standards organization.

"Instead of being one content providers, people will be object developers. The object marketplace will start up pretty quickly," Andreessen said. "This is going to have a pretty dramatic change on the way people produce applications." — Sharon Gaudin

Netscape's Marc Andreessen says content providers will become object developers

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CA adds Windows NT support to Unicenter TNG

By Bob Francis

Add Computer Associates International, Inc. to the growing list of companies that believe Windows NT is a serious enterprise computing platform.

At CA-World '96 this week in New Orleans, CA officials will announce Windows NT versions of several systems management products, which will link to their mainframe counterparts, sources told *Computerworld*.

The new products (see box) will let users launch MVS or VMS systems management operations — such as storage management — from Windows NT workstations or servers, or vice versa, the sources said. While some systems management products let users

manage on different platforms, CA's sweeping array of products is broader than other offerings.

The products are being beta tested at some sites and will be available by year's end. CA officials declined to comment on unannounced products.

The ability to use systems management tools from a variety of platforms allows for management of distributed operations. Systems managers often must manage an application from both environments by using different tools.

The workstation versions of the company's CA-Unicenter: The Next Generation (TNG) are also a shot across the bow of the recent IBM/Tivoli Systems, Inc. merger.

IBM has announced plans to integrate its mainframe systems management products with Tivoli's distributed systems management environment, but that may not happen until later next year when CA begins to ship its new products.

"There's still plenty for both CA and IBM to do in terms of distributed management. This is probably a step in the right direction," said R. Paul Mason, an analyst at International Data Corp., a research group in Framingham, Mass.

Vendors are battling each other to see which can give users packages for managing distributed systems. But many users remain skeptical.

"We can see we'll need some

sort of overall management environment down the road, but right now, it's not something we need," said Michael Tardif, vice president of enterprise technology at Goldman, Sachs & Co. in New York.

CA in Islandia, N.Y., also will announce an Internet business unit at CA-World '96. The unit will provide World Wide Web hosting and development services for large corporations.

The unit also will focus on linking legacy applications and systems to Web-based applications, sources said.

The Internet business unit will delve into a new area for CA: small business. The traditionally enterprise-oriented company is developing a system to support Web sites that link a community of small businesses or organizations, sources said.

SAP opens up R/3

Users will be able to mix and match components ...

By Julia King

SAP AG's highly integrated R/3 enterprise software is destined to get happier.

As of December, the $1.8 billion applications giant plans to sell R/3 in dozens of independent software components that users can mix and match with non-SAP software. The bonus is that most of the data integration for which R/3 is famous will remain intact, company officials said.

SAP will announce R/3's new Business Framework in U.S. users at an annual user conference this week in Philadelphia. The first products based on the design will ship in December as part of Version 3.1 of R/3.

SAP also will significantly expand the way users can access R/3. Under the new design's business application programming interfaces (BAPI), users will be able to reach the system via browser software, Microsoft Corp.'s Exchange mail system or JetForm Corp.'s electronic forms software.

BAPIs are SAP's new method for integrating third-party applications into R/3. SAP officials said the company will publish the specifications on its World Wide Web site in the fourth quarter.

Several users applauded SAP's modular approach and its more open stance toward third-party software vendors. Those vendors provide bolt-on applications such

as on-demand planning and transportation scheduling software. Previously, users had to develop their own interfaces between R/3 and legacy systems and other third-party software.

"Bolt-ons have become part of our SAP architecture. To the extent that SAP supports and endorses these [systems], it will make things less of a puzzle for in-

R 3 readouts

ADVANTAGES
- ► Easier to implement
- ► Easier to reconfigure as business needs change
- ► Snap-together integration with non-SAP products

DISADVANTAGES
- ► Greater systems complexity
- ► Potentially higher management costs

dividual implementers," said Tony Scott, director of information management and shared services at Bristol-Myers Squibb Pharmaceutical Group in Princeton, N.J.

Splitting R/3 into components also will let users enhance systems on a part-by-part basis rather than replace an entire R/3 system each time there is a release

"This is a good thing because, in many cases, you don't need to do a full-blown upgrade to get to the areas where you want more functionality," said Andy Haler, an R/3 user at Hydro Agri North America in Tampa, Fla.

"SAP has obviously been listening to users balking that one size doesn't fit all," said Jack Maynard, an analyst at Aberdeen Group, Inc. in Boston.

The onus

The downside could be greater systems complexity and higher systems management costs.

"It will be more work to piece together, and it's not going to be free. There will be additional costs," said one large R/3 user who requested anonymity.

Still, the user added, his company would be willing to pay more for a system that could more easily meet its shifting requirements.

Meanwhile, dozens of third-party vendors eager to ride the SAP wave are announcing R/3-compatible products that will work with the new design.

Information Builders, Inc. in New York this week will announce a data warehouse package for R/3 users. Informix Software, Inc. will announce a business unit that works exclusively with SAP customers. Even Oracle Corp. — a rival of SAP's on the client/server applications front — plans to announce a set of R/3 data warehousing tools (see story at right).

... such as Oracle databases

By Craig Stedman

Oracle Corp. this week will announce a free tool kit aimed at making it easier to get SAP R/3 data into Oracle-based data warehouses.

The tool kit, which is being introduced at SAP AG's Sapphire user conference in Philadelphia, provides a graphical user interface into R/3's data repository. The code needed to extract data into a warehouse is automatically generated behind the scenes, eliminating the need to write custom programs using SAP's proprietary procedural language.

But there's a catch: Corporate customers initially will have to go to systems integrators and R/3 consultants to take advantage of the new software. For the time being, Oracle doesn't plan to make the Warehouse Toolkit for SAP directly available to end users.

One step at a time

"We're just trying to walk before we run here because it's a pretty complex thing to build a data warehouse," said Gail Ennis, senior marketing director for worldwide alliances at Oracle. "We want to make sure that it's done correctly."

Bob Washa, SAP R/3 technical manager at Chevron Corp. in San Francisco, said Oracle's tool kit might reduce the need to use specialists to build data warehouses with R/3.

But Oracle's reliance on integrators and consultants "is probably not the best partnership arrangement," Washa said. "We'd kind of like the tables to be turned so that we got the tool kit and a list of consultants who we could call if we needed help."

The limited distribution indicates that the tool kit "still needs some fine-tuning before it gets packaged up" for end users, said Clare Gillan, an analyst at International Data Corp. in Framingham, Mass.

Nonetheless, Gillan and other analysts said the Oracle tool kit should present a much friendlier face than what customers see when they work directly with SAP's Advanced

Business Application Program language.

Currently, programmers "sit there writing lines of code" to extract R/3 data for warehousing, said William Bell, managing director at Computer Sciences Corp.'s North American SAP consulting practice in Chicago. "Oracle's tools bypass all of that. You just select the items you want off of the screen."

Oracle is using SAP's traditional remote function call interfaces to R/3 but is evaluating SAP's new higher-level business application programming interface. Ennis

Tool shed

● Data extractor that automatically generates the code for moving R/3 tables and columns to an Oracle data warehouse

● Data navigator that defines a schematic model of the warehouse so that analysts can access the data

● Data mapper that lets users visually set up the process for populating the warehouse with the extracted data

wouldn't say when the tool kit will support that.

The tool kit, which is being built on top of Oracle's Developer/2000 development software, will go into beta testing in October and is expected to be ready for shipment by year's end. It supports Oracle7 databases.

Make it easy

Vendors such as Information Builders, Inc. Cognos, Inc. and Business Objects, Inc. are already shipping similar extraction and analysis tools that mask the complexity of R/3, said Bobby Cameron, an analyst at Forrester Research, Inc. in Cambridge, Mass. But Oracle's dominant position in the database market is expected to give its tool kit obvious appeal to customers, Cameron said.

Competition

Informix Software, Inc., one of Oracle's database rivals, will try to steal some of the spotlight at Sapphire by announcing plans to support Windows NT-based R/3 applications on its OnLine Dynamic Server by year's end. Informix also is setting up an SAP-oriented business development unit.

Apple in Epic battle for laptop sales

By Lisa Picarille

Attempting to regain its position as a leader in the laptop market, Apple Computer, Inc. is expected to unveil a new line of Power-Books in November.

The Epic line is expected to help debug past quality problems that caused Apple to recall some PowerBook models. The overall coupled with a battery problem more than a year ago, has contributed to Apple's falling from fourth to ninth place in laptop sales, according to preliminary second-quarter 1996 figures from International Data Corp, a research firm in Framingham, Mass.

The Epic family will be based on the 603E PowerPC processor. The standard Epic will run at 117 MHz, but users will be able to

plug in higher 603E processors that run as fast as 167 MHz. Prices will range from $2,500 to $3,700.

The machines are also expected to include 12M or 16M bytes of RAM that can be easily upgraded to 64M bytes, along with a 750M- or 1G-byte hard drive and a removable six-speed CD-ROM drive, according to sources briefed by Apple.

"These PowerBooks have been a long time coming, and I am very excited," said Russ Chapman, technical services manager at the Boston office of Jack Morton Products, a promotional service firm. "If you're a Mac site and you didn't want to move to a PC, it's been a real waiting game. Anything is better than nothing for Mac users. But the downside is

that it might be too little, too late. The PC laptops all have cool cutting-edge stuff in them, and they are coming out more quickly."

Apple was expecting to rebound from its Power-Book slump by teaming with IBM. The two companies announced a deal several months ago when by IBM was to release an IBM-branded PowerPC ThinkPad notebook running the Mac OS. That MacThinkPad was slated to be delivered earlier this month at Macworld Expo in Boston. But IBM quietly opted to ship that machine only as the Japanese market and instead will take the wraps off a trimmed-down "Think-Book" at Comdex/Fall '96 in November, according to sources briefed on IBM's plans.

Notebook computers

Baby Bells call in new data pipe technology

By Kim Girard

As several Baby Bells push forward with ADSL trials, more vendors are racing to unveil equipment that promises superfast data access for telecommuters and users in remote offices.

Pacific Bell and GTE Corp. recently began Asymmetric Digital Subscriber Line (ADSL) trials in San Ramon, Calif., and Redmond, Wash., respectively. Other regional Bell operating companies (RBOC) promise ADSL in other areas by year's end.

"The real interest here is remote communications for telecommuters and small branch offices using the Internet as a conduit for getting back to information at corporations," said Dan Merriman, director of remote communications at Giga Information Group in Cambridge, Mass.

ADSL uses regular copper telephone lines to send data at 64K bit/sec. and receive data at speeds of between 1.5M bit/sec. and 6M bit/sec. ADSL, which requires new modem technology, is 90 times faster than Integrated Services Digital Network (ISDN). The technology offers telecommuters connections at near-synchronous speeds without having to make a huge investment in fiber lines.

Digital does it

ADSL squeeze mega-bit speed from the phone network. Instead of moving on the public network, ADSL traffic is routed to a data network at the phone company's central office, which turns twisted-pair phone lines into digital pipes.

Gary Troutman, manager of corporate development at Georgia Institute of Technology in Atlanta, said he would welcome an alternative to the 28.8K bit/sec. modem he uses for telecommuting. While his existing modem fails to provide a desired "subsecond response," ADSL speeds would provide "instant gratification," he said. "With a bigger data pipe, it would be better than I could imagine," he said. "Many people would want this capability at their house."

Joshua Turiel, director of information services at Adfile Marketing and Communications in Norwood, Mass., is also following the progress of ADSL. Turiel said he would consider using ADSL to link several client locations to the firm's main office.

"I'd run some ADSL to other client locations where it doesn't make sense to go to T1, and ISDN is too slow," he said.

Price cut expected

A limited number of ADSL products are available at about $4,000 per modem pair. That price should drop to about $500 by 1998, when a greater volume of products are expected to hit the consumer market, backed by a commitment from the carriers.

Analysts said ADSL development is accelerating as RBOCs gear up to compete with the cable industry, which is targeting its modems for use with broadband cable connections.

Although 90% of U.S. homes are connected to cable networks, few businesses are. Also, cable technology was designed for one-way video traffic and requires multiple users to share bandwidth, which can affect speed. ADSL provides dedicated bandwidth for local access.

Gil Gordon, a consultant who specializes in telecommuting and virtual office issues at Gil Gordon Associates, Inc., said he is interested in cable and ADSL technology. But Gordon said he is worried that carriers will market it poorly just as they did with ISDN, which was deployed on a limited scale and at widely varying prices.

"When you deploy a new technology ... you're deployed, or you're not," Gordon said. "The corporate customer who wants to set up 100 or 1,000 telecommuters with ISDN or ADSL wants to place the order and know they have it."

While
you were out:

your communications system
called us, told us about a glitch
and we fixed it.

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Sybase beefs up 'net offerings

Tools link Web sites to databases, apps
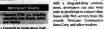
By Frank Hayes

Sybase, Inc. last week unveiled NetImpact Studio, the first entry in its family of development tools and services designed to help corporate users create World Wide Web-based applications.

The drag-and-drop tool set — which will run under Microsoft Corp.'s Windows 95 and Windows NT and array beta testing later this year — was announced at Sybase's annual Powersoft user conference.

NetImpact Studio

- Supports HTML 3.2, including embedding style sheets, tables and frames

- Connects to applications built using PowerBuilder and Optima++, Visual Basic, Delphi, Java and C++

- Supports Java applets, ActiveX controls and Netscape Navigator plug-ins

- Connects to Web servers through Netscape API, Industry Standard API and Common Gateway Interface

Developers at the conference said NetImpact Studio looked useful for connecting Web sites to databases and applications.

"Right now, we have people who are just keying in the information for our Web page," said Douglas Joe, an analyst in the MTV Networks division of Via-

com, Inc. in New York. "[Net-Impact] could help us put together program information up on the Internet directly."

"NetImpact Studio looks like a good growth path for PowerBuilder shops to move into," said Stephen Rasmussen, a consultant at Orkand Corp. in Atlanta.

The new tool set is a visual development system for connecting applications and components built with C++, Java, PowerBuilder and other development tools with Web-based applications. Along with a drag-and-drop environment, developers can also write code in JavaScript to connect databases with Web servers from Microsoft, Netscape Communications Corp. and other vendors.

Unifying products

NetImpact Studio will eventually be bundled with other Sybase products, and Sybase will roll out additional products under the NetImpact name later this year.

The Emeryville, Calif.-based firm hopes the NetImpact family of tools will help unify its product lines and division under a single umbrella, as it struggles against Oracle Corp., Informix Corp. and other database vendors, said Mitchell Kertzman, who became Sybase's CEO in July. Kertzman acknowledged that Sybase has grown by acquisition too quickly to integrate new units such as Powersoft, Micro Decisionware and Visual Components.

Mobile workers can view intranet data while off the network

By Craig Stedman

Sybase, Inc. is modernizing its SQL Anywhere mobile database with new tools that will let remote users browse portions of a corporate intranet while off-line.

Sybase last week announced plans to combine SQL Anywhere with a personal World Wide Web server and tools for developing intranet-based applications. That lets SQL Anywhere customers replicate parts of their intranets out to laptops used by mobile workers such as salespeople and insurance agents.

The employees can then browse through the intranet and process transactions against their local databases even though they are disconnected from the network. Changes are replicated back to the central database when users reconnect.

On the intranet

The personal Web server makes it look "just like you were on your intranet, even if you're not," said Jeff Browning, director of development at Cognitech Corp. in Atlanta. Cognitech, which sells SQL Anywhere-based sales force automation software, is beta-testing Sybase's new Professional 5.5 release.

Stolt Parcel Tankers, Inc., a Houston-based cargo shipper, expects to use SQL Anywhere to extend upcoming intranet applications out to its ships as they sail on the high seas.

Stolt already uses the Sybase database in some shipboard applications. But the intranet approach should provide a standard infrastructure that will make it feasible to replicate much more data to the fleet, said Jim Shepard, ship-

Mobile computing

owning systems manager at Stolt.

Right now, each application "is a monumental undertaking," Shepard said. An intranet also could carry a wider variety of corporate information to make ship workers "feel more a part of the field," he added. "As a shipping company, our employees are very, very remote."

The intranet replication capabilities should help lower mobile connectivity costs because users have to be online only long enough for the data to cross the wires, said Wayne Kernochan, an analyst at Aberdeen Group, Inc. in Boston.

However, bandwidth restrictions could pose a roadblock for some users, according to Kernochan and other analysts. Security is also a potential issue, and companies have to create business rules to reduce the ever-present danger that off-line users will work with data that isn't fresh.

The sequel

- Lotus and Internet E-mail protocols

- Replication of binary large objects

- Common remote procedure calls with Sybase's SQL Server enterprise database

- Continuous background backups while system is in use

The Web server and intranet tools bundled with SQL Anywhere Professional 5.5 are part of the new NetImpact development suite built by Sybase's Powersoft Corp. tools unit (see related story at left). The package, which also includes Powersoft's InfoMaker query and reporting tool, is due to ship within 60 days for $499 per user.

SQL Anywhere competes with Oracle Corp.'s low-end databases and Microsoft Corp.'s SQL Server software for Windows NT. But SQL Anywhere's small footprint of under 1M byte of memory gives it an advantage for mobile uses, said Herb Edelstein, president of database consultancy Two Crows Corp. in Potomac, Md.

As a workgroup database, SQL Anywhere is less distinctive, he added.

Novell finally throws its intranet party

By Tim Ouellette

Novell, Inc.'s fashionably late entrance to the intranet gala last week may do little more than get users to turn their heads and take a look.

The Provo, Utah, firm trotted out IntraNetWare, an intranet suite based around NetWare 4.11. Novell's next network operating system (see chart).

Observers saw strengths and weaknesses in the suite. Intranets can be considered glorified LANs — an area that Novell dominates — but Novell lacks the most share of Netscape Communications Corp. or Microsoft Corp.

And NetWare is based on a different protocol — IPX — from the Internet Protocol, which is used over the Internet and on intranets.

"IntraNetWare is still an IPX-based product. [Novell is] force-fitting NetWare into the intranet space," said John Oltsik, an analyst at Forrester Research, Inc. in Cambridge, Mass. "Novell needs to offer a native IP version of NetWare."

What's included

IntraNetWare buyers will get NetWare 4.11, a World Wide Web server and browser, an IPX-to-IP gateway and a multiprotocol router for network connections. Novell has promised development tools at a later date.

The suite will ship next month simultaneously with NetWare 4.11, code-named Green Rover. Novell will flesh out pricing and technical details at the NetWorld/Interop '96 conference to be held

in Atlanta next month.

In theory, the intranet game is Novell's to lose thanks to the company's huge base of 55 million NetWare users. But analysts and users also said the intranet game is almost over because many businesses have already turned to intranet and Internet products from Netscape or Microsoft.

For example, the National Board of Medical Examiners in Philadelphia, predominantly a NetWare shop, has turned elsewhere for intranet servers.

"I will look at [the NetWare Web Server] when NetWare 4.11 ships," said Steve Lopez, network manager at the medical testing board. "But I have already made my commitment" to Windows NT and related Web products, he said.

Novell wants users such as

Lopez to be able to run Windows NT, NetWare and Unix Web servers in the same environment and manage everything with fewer utilities. So the company will port Novell Directory Services (NDS) to Windows NT by next year.

NDS on NT "would allow me to manage the NT server and administer the rest of my NetWare environment from one place. That is a big strength," said Scott Kunau, president of Certified Computer Services, Inc. in Cincinnati.

Although IntraNetWare is a catch-up product, "many Novell customers are still experimenting with intranets, and it is not too late to consider Novell," said Cindy Borovick, an analyst at International Data Corp. in Framingham, Mass.

Some users, after beta-testing NetWare Server 2.5, said they would consider Novell for intranets to get the benefits of the one-stop management capabilities.

Under the hood

NetWare 4.11 (Green Rover)
NetWare Web Server 2.5 (in beta testing)
Netscape's Navigator Web browser
Multiprotocol router for intranet connections
IPX-to-IP gateway
GroupWise messaging and ManageWise management packages can plug in, although sold separately

Win 95 lands softly on desktops

On operating system's first-year anniversary, users say disruption of Win 95 has been minimal

By Bob Francis and Mindy Blodgett

A year after fears that Windows 95 would wreak havoc on corporate budgets to upgrade desktop hardware, the operating system that caused all the fuss barely rates a shoulder shrug.

"We really haven't run into too many problems," said Robert Mayer, technical support manager at Luna Corp., a retail chain based in Charlotte, N.C. "We haven't seen much impact on our hardware buys because at the same time the operating system came along, system prices continued to fall, particularly the price of memory."

Windows 95's hardware requirements included a minimum of 8M bytes of RAM (16M bytes preferred), a Pentium processor and a recommended 550M-byte hard drive.

A year ago, those requirements added several hundred dollars to system costs. But all these items have declined rapidly in price over the past year, allowing users to meet or exceed those requirements for the same price.

For instance, a 200-MHz Pentium system with 8M bytes of RAM and a 1G

byte disk drive is available for less than $2,000. That is about what a 100-MHz Pentium system with 4M bytes of RAM and a 500M-byte hard drive used to cost.

A Computerworld survey shows that 34% of companies that moved to Windows 95 spent less than $350

per desktop on hardware, memory and disk storage.

Yet Windows 95 has nevertheless kicked off many changes on the standard desktop PC and laptop, analysts and users said. "We have undergone a monolithic change across desktops and laptops because of Win 95," said Ken Delaney, an analyst at Gartner Group, Inc. in San Jose, Calif. "It's changed the way we work, although the last year has been one long beta test while Microsoft worked out the bugs."

PC hardware vendors began bundling Windows 95 with their systems almost as soon as it became available from Microsoft Corp. Usually they included it with a dual-load option along with Windows 3.1.

Shortcomings

But Windows 95 hasn't lived up to all its promises. For instance, it was advertised as a plug-and-play operating system that would benefit mobile users. Supposedly, they could plug their laptops into docking stations with the power on and suffer no consequences — a feature called "hot docking." But it hasn't been as simple as it sounded.

With most laptops using Windows 95, the user must first turn off the system, a more time-consuming process.

"It's really more warm-docking than hot-docking," said Randal Giusto, an analyst at International Data Corp., a research group based in Framingham, Mass.

Most of the portable vendors have worked around the docking issue.

For portables, though, users may be left with Windows 95 as their lone choice. Windows NT lacks plug-and-play features such as hot-docking, although analysts said Microsoft is working on fixing that in the next release.

Still, many portable computer vendors plan to support NT Workstation on laptops and to preload it on their machines later this year.

Some users who have switched to Windows NT want to standardize on the operating system across the enterprise, including laptops, many laptop vendors said.

But analysts aren't sure that NT on laptops is a smart idea.

"We think that NT is totally overhyped on the portable," Giusto said.

"You can really only put NT on the laptops with the fastest chips and biggest hard drives. You can't put it on a laptop below 120 MHz, and so that leaves out corporations looking for value-priced laptops between $2,500 and $3,500," he said.

Win 95 may be just a passing fancy

Some users seem to agree with Le Tocq's assessment and are bypassing Windows 95 to move straight from Windows 3.1 to Windows NT Workstation or are implementing mixed environments.

In a Computerworld survey, 24% of 108 information systems professionals polled said they skipped Windows 95 and went straight to Windows NT.

Bruce Smith, systems administrator at Legion Communication Technology, Inc., a U.S. Department of Defense subcontractor in Arlington, Va., said he is limiting his NT rollout to 4.0 upgrades to power users because NT.

"Microsoft has made no secret that NT Workstation is the long-term strategic desktop platform, so we're planning to keep our desktops leading-edge — you always have to feed

NT doesn't add specific capabilities for most of our users.

William McGarry, Owens Corning

the buggy RAM monster," Smith said.

Briscoe Stephens, advanced scientific information systems coordinator at NASA's Marshall Space Flight Center in Huntsville, Ala., said his agency uses a mixture of Windows 95 and NT Workstation.

"There are a lot of low-end users whose PCs should be used as a boat anchor, and those users are on Windows 95," Stephens said. "Our theory is if you have a larger machine, you might as well have the stability of NT Workstation."

Some users said the steadily declining price of system memory is sparking Windows NT Workstation sales.

"About 70% of our large customers are choosing NT Workstation over Windows 95. And overall among all customers, it's about a 50-50 split between the two operating systems," said Deric Scott, a systems engineer at Information Management

Systems, Inc. in Atlanta. But Scott said he expects that the pendulum will have overwhelmingly swung by year's end in favor of NT Workstation, which will account for 80% of IMS' operating system sales.

Windows 95 can play a key role in making the transition to a 32-bit environment less painful.

"In most cases, if you're looking for the smoothest migration to 32-bit, then Windows 95 is the choice," said Michael Gartenberg, research director at Gartner Group, Inc. in Stamford, Conn.

Weighing costs

Frank Delargy, senior IS manager at Polaroid Corp. in Waltham, Mass., said even though the company will likely eventually move to NT for higher-demand environments such as engineering and graphics, advantages such as built-in networking options and drivers made the company's initial switch to Windows 95 worthwhile.

"We've had nobody ask to go back [to Windows 3.1]," Delargy said.

Gartenberg said companies may also be considering the cost of moving to NT vs. Windows 95 and whether the benefits will make it worthwhile.

"Windows NT 4.0 has a better cost of

ownership but has a higher migration cost," Gartenberg said. He noted that the cost of migration to NT can be 30% more than a similar migration to Windows 95 when factors such as additional memory and installation requirements are considered.

Adam Taylor, product manager for desktop and business systems at Microsoft, said with the release of Windows NT 4.0, companies can take advantage of the similar interfaces of Windows 95 and NT 4.0.

Admitting that corporate adoption is slower than consumer adoption of Windows 95, Taylor said organizations "just work at a slower pace because it's a thornier issue getting it deployed. But we're very pleased with how it's being adopted."

William McGarry, director of IS architecture at Owens Corning Corp. in Toledo, Ohio, said he envisions an environment of mostly Windows 95 users, with NT being used for select implementations. McGarry said the company has already deployed 4,000 Windows 95 seats out of a total of 10,000

"NT for the vast majority of our users doesn't add any specific capabilities," he said.

Windows 97 or Cairo?

See our analysis online, at www.computerworld.com/contents

Win 95 just one in bushel of woes at Apple

By Lisa Picarille

Despite the wishful thinking of Windows zealots, the release of Microsoft Corp.'s Windows 95 one year ago didn't cause Apple Computer, Inc. to sink in market share, suffer financially or collect reams of bad press clippings.

Apple managed all those things on its own.

"I think most of Apple's problems are self-inflicted," said Kevin Hause, an analyst at International Data Corp., a market research firm in Framingham, Mass. "Apple would still be in a relatively poor position even if Windows 95 never existed."

Sinking shares

Apple's market share sank to about 5% from 11% in the past 18 months, according to Dataquest, a market research firm in San Jose, Calif. That drop was due to poor product forecasting, delays in getting products to market and shrinking gross margins.

Dataquest predicts Mac OS-based systems will sell 5.4 million units this year, and Windows 95 sales will reach 45.7 million units. Windows 3.1 is expected to still be going strong at 20.9 million units.

But Windows 95 affected Apple by usurping the ease-of-use reputation on which Apple had relied for a decade.

"Whether it is or isn't easy to use, Win 95 created the perception that it was as easy to use as Mac," Hause said. "This crippled Apple from falling back on that as a differentiator. That may have limited Apple's ability to grab entry-level users as quickly."

One user said Apple's inability to deliver Copland, a major upgrade to its Mac OS, further hurt the Cupertino, Calif. firm.

"We were waiting for Copland to be able to hold off the onslaught of Windows throughout the entire company," said an information systems manager at a retail store who requested anonymity.

"But Copland was delayed and then delayed again, and now it's not coming out as planned," the manager said. "We don't want to move to Windows 95, but we can't fight the operating system battle with Mac technology. It's like using a slingshot when Microsoft is armed with Uzis."

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For instance, a 200-MHz Pentium system with 8M bytes of RAM and a 1G

byte disk drive is available for less than $2,000. That is about what a 100-MHz Pentium system with 4M bytes of RAM and a 500M-byte hard drive used to cost.

A Computerworld survey shows that 34% of companies that moved to Windows 95 spent less than $350

[pie chart]

Do you agree that Windows 95 is a transitional operating system between current Windows versions and eventual standardization on Windows NT?

STRONGLY AGREE 41%
SOMEWHAT AGREE 48%
SOMEWHAT DISAGREE 8%
STRONGLY DISAGREE 3%

Base: 400 Windows 95 users

per desktop on hardware, memory and disk storage.

Yet Windows 95 has nevertheless kicked off many changes on the standard desktop PC and laptop, analysts and users said. "We have undergone a monolithic change across desktops and laptops because of Win 95," said Ken Dulaney, an analyst at Gartner Group, Inc. in San Jose, Calif. "It's changed the way we work, although the last year has been one long beta test while Microsoft worked out the bugs."

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Shortcomings

For instance, it was easier than it used to be a plug-and-play operating system that would benefit mobile users. Supposedly, they could plug their laptops into docking stations with the power on and suffer no consequences — a feature called "hot docking." But it hasn't been as simple as it sounded.

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Some users seem to agree with Le Tocq's assessment and are bypassing Windows 95 to move straight from Windows 3.1 to Windows NT Workstation or are implementing mixed environments.

In a Computerworld survey, 26% of 118 information systems professionals polled said they skipped Windows 95 and went straight to Windows NT.

Bruce Smith, systems administrator at Logicon Communication Technology, Inc. a U.S. Department of Defense subcontractor in Arlington, Va., said he is finding his NT Workstation 4.0 upgrades to power users to move.

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Laptop leanings

Which operating system is on your portable and which do you plan to purchase for your next portable system?

Current

82.4%	
	6.8%
	3.4%
	2.7%
	1.7%
	0.5%

Next

42.2%	
	0.4%
	0.5%
	2.5%
	1.5%
	3.5%
	31.7%

■ Windows 3.1   ■ Mac OS
■ Windows 95   ■ Unix
■ Windows NT   ■ Other
■ OS/2

Base: 102 medium-size and large sites from a January 1996 survey

Amdahl looks out from Windows NT

New products go on display today

By Michael Goldberg

Amdahl Corp. today will unveil four bundles of Windows NT-based hardware, software and services that are aimed at Internet, database, groupware and branch office applications.

The centerpiece of the packages is the EnVista server line, which features Pentium Pro processors from Intel Corp. and Microsoft Corp.'s Windows NT Server operating system [CW, May 6]. The packages will be available by Sept. 30.

Some bundles will include well-known commodities such as Lotus Development Corp.'s Notes and Oracle Corp.'s Oracle7 database. Amdahl also will provide its own technology for mainframe-to-Windows-NT server connectivity and for World Wide Web access to

server-based databases.

Amdahl will offer consulting services to help users implement the systems and build on its recent acquisitions of technology consulting firms DMR Group, Inc. and Trecom Business Systems, Inc. Amdahl projects that its shifting mix of products will mean 60% of its sales this year will come from software and consulting ser-

Amdahl will launch these Windows NT offerings using its EnVista servers		
PRODUCT	FUNCTION	PRICE*
Branch Office Server	Includes centralized management system for 50 remote sites	$1,538
Database Server	Uses Oracle7 or Microsoft SQL; comes with anti-hero LAN storage subsystem	$195,000
Groupware Server	Uses Lotus Notes or Microsoft Exchange Server to support approximately 2,100 users	$90,000
I-Net Server	Uses Microsoft Internet Information Server, Java Web access to mainframe and OLap databases through Amdahl gateway technology	$77,000

*Entry-level pricing; includes installation and consulting

vices. Package prices will depend on the application. For example, it will cost $77,000 for the I-Net Server and $1.5 million for a package to centrally manage 50 remote offices (see chart).

Change direction

Some mainframe shops familiar with Amdahl from its years of selling System/390-compatible hard-

ware have urged the Sunnyvale, Calif., company to branch out into lighter machines. Amdahl's first response was to resell Sun Microsystems, Inc.'s Solaris servers.

Offering EnVista is a good move because Amdahl can bring its familiarity with big data center management to less-costly front-office applications in the Microsoft world, said Jeff Biggs, Win-

dows NT systems manager at Lexis-Nexis in Miamisburg, Ohio.

"We want them to move into directions like that [because] we want to see the cost of computing driven down. Amdahl's entry into the commodity market is encouraging because they understand the MVS environment" of IBM-compatible mainframes, Biggs said.

Jim Greene, an analyst at Summit Strategies, Inc. in Boston, said Amdahl's prepackaged approach to selling Windows NT servers indicates the vendor "is trying to get ahead of the curve. That [approach] is really going to characterize the market."

Like other vendors, Amdahl seeks to differentiate itself in the Windows NT arena with its data center expertise. Greene said. IBM, with its mainframe knowhow, could adopt a similar tactic. But the company so far hasn't chosen to emphasize a Windows NT strategy, he said.

Browser

Internet Explorer is their primary browser, while 76% of respondents said they use Netscape Navigator. But Internet Explorer has nearly doubled its standing in the past three months.

"Although Netscape has the [dominant browser] share right now, they could easily lose it to Microsoft," said Judy Cohen, director of the Internet and electronic commerce laboratory at American Management Systems, Inc. in Fairfax, Va.

"I can see Netscape's fear," Cohen said.

Allegations that Microsoft uses anticompetitive moves to put its Internet Explorer browser on user desktops were laid out in an eight-page letter Netscape recently sent to the U.S. Department of Justice.

Microsoft's bundling of its Internet Explorer browser for use with Windows 95 and Windows NT operating systems is unfair. Netscape officials said. Netscape charges $49 for single copies of its Navigator browser. Netscape also accused Microsoft of offering secret deals to computer makers to carry Internet Explorer.

A spokesman for the Justice Department declined to comment

on Netscape's letter or the department's planned action on it, if any. But he said an antitrust investigation of Microsoft is "ongoing."

Legal bluster aside, the vendor bickering has benefited users.

Upstart Netscape spurred Microsoft to build Internet products in the first place, and Microsoft's free software has helped some Netscape users cut better deals, said Ulha Naik, an analyst at First Albany Research in Boston.

One big company was able to get many copies of Navigator at $3 per copy, Naik said.

Mike Albert typifies the bottom-line thinking some IS managers have adopted.

Albert, chairman of A World Wide Web advisory board at Bechtel Group, Inc. in San Francisco, said if the rival browsers can do basically the same thing at the same speed, it's tough to ignore Microsoft's freebie.

"We have standardized on Netscape — today. But knowing that Microsoft will catch up, we constantly reevaluate," Albert said. "By the time you buy a copy [of Netscape's product] and support and buy the subscription, it's $400 or $50 a copy. We have roughly 10,000 desktops. What are we going to pay for $500,000? Is it worth it?"

By getting users hooked on their browsers, Netscape and Microsoft hope to spark sales of more expensive, related software.

The whole browser brouhaha will likely have sputtered out by this time next year, analysts said.

Microsoft plans to include Internet Explorer functions in the Windows operating systems early next year. And Netscape plans to split Navigator into pieces that users can mix and match or plug in to other applications (see story,

below). To lobby the Justice Department, Netscape has hired Gary Reback, the same Palo Alto, Calif., lawyer who brought Intuit, Inc.'s losing antitrust case against Microsoft last year.

Joe Sims, an antitrust lawyer at

Jones, Day, Reavis & Pogue in Washington, said Netscape is all wet. Sims called the claim by Netscape — which dominates the browser market — that it is being treated unfairly by a company with a minority share "bizarre."

Netscape steers toward slimmer Navigator

Netscape plans to split its Web browser into pieces to help soothe users who are frustrated with browsers' ever-increasing size.

Starting with Version 4.0 of Navigator, due by year's end, Netscape will make various parts of its browser available separately. The idea is to let users snap in only the modules they need, without having to buy the entire browser.

Slimmer browsers wouldn't require so much disk space and would save users money otherwise spent on extra space.

But the Mountain View, Calif., company isn't sure yet how the piecemeal plan will work.

One scenario would let users configure their own Navigator browsers and leave out, for example, Netscape's electronic-mail module or newsreader if they don't want it.

Another more development-oriented option is to break up Navigator into even smaller

pieces. Modules would include particular features, such as Hypertext Markup Language support or some forms of editors and buttons, that could be inserted into Web and Internet applications.

"We haven't decided for sure how we're doing this," said Rosanne Siino, director of public relations at Netscape. But letting "people pick and choose what they need" is Netscape's goal, she said.

Snap-in components would give users a more flexible way to design Web applications, said

John Robb, an analyst at Forrester Research, Inc. in Cambridge, Mass.

"You could customize what your users saw and how they interacted with intranets, rather than just using the stuff Netscape has built," Robb said.

Making modules would also help Netscape compete with Microsoft. The next version of Microsoft's Internet Explorer browser, due early next year, is expected to be integrated with the Windows 95 and Windows NT operating systems.

— Kim S. Nash

Going to pieces

- User interface, such as tool bars and sliders
- Security, support for Secure Sockets Layer and X.509 certificates
- E-mail, support for Internet Mail Access Protocol and Simple Mail Transfer Protocol
- Plug-ins to Open Database Connectivity drivers and relational databases

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Attack highlights Web security risks

By Gary H. Anthes

The recent publication of the U.S. Department of Justice's World Wide Web site by hackers highlights a new vulnerability for organizations getting on the Internet.

The exposure is especially great for companies that allow unsophisticated users to maintain Web servers.

Hackers defaced the Justice Department's home page Aug. 17 with antigovernment diatribes, a swastika, a nude photo and other graffiti. The intruder was apparently protesting the Computer Decency Act

of 1996, which would criminalize the distribution of indecent material accessible by children on the Internet.

A spokesman for the agency said it wasn't known who had invaded the Web site (www.usdoj.gov) or how the break-in was accomplished. The Web site contains

speeches, news releases, biographies and other information about the department, and it gets about 160,000 accesses, or hits, per week, the spokesman said.

The first step toward protecting a Web server is to do a risk analysis, said Bob Bagwill, who runs the Computer Security Resource Clearinghouse Web server at the National Institute of Standards and Technology. "Obviously, if you don't put secret stuff on your Web server, it can't be lost if the system is compromised," he said.

But even public information should be protected from alteration, Bagwill said. That could be done by putting it on read-only optical discs, he said.

Bagwill said the public Web site should be isolated on a stand-alone computer, and unnecessary protocols and features should be disabled. "Machines are not that expensive; for $2,000, it makes sense to have a sacrificial machine," he said.

Hacking In

A source at a major financial services firm said his company put its public Web server on the "untrusted side" of a firewall to ensure that confidential information on the other side couldn't be accessed. He said making the public site 100% secure probably isn't worth the resulting loss of convenience for rapid content deployment.

"Hacking into your public Web server is a little embarrassing, but it may not be of any great consequence," the source said.

Robert Campbell, managing director at Peak Consulting in Woodbridge, Va., told the Justice Department's Web developers may have left bugs in the source code that allowed a hacker to gain access to executable code. That may have been done by guessing a privileged user's password or intercepting passwords on a communication line that isn't properly protected, he said.

Campbell said the hacker may have used that access to change the Web page contents or reroute incoming calls to a bogus directory containing the illicit Web content.

Terry Swack, a vice president of the Webmaster's Guild, Inc. in Cambridge, Mass., downplayed the security risks. Products such as Netscape Communications Corp.'s Secure Transaction Server and awareness by developers have minimized the risk for most organizations, she said.

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Now, you can actually "fly" through your enterprise and fix problems without ever leaving your desk.

Unice

Navigator 3.0 browser wins top marks

By Garrett N. Ray

For all the vendor vs. vendor bluster in the browser duel between Netscape Communications Corp. and Microsoft Corp., it's clear that the ongoing tussle is making a sterling Netscape product even better.

Navigator 3.0, released for general availability last week, is a well-tested, reliable and feature-rich World Wide Web browser that will sit happily on the desktop of virtually any Web user.

Navigator 3.0 has a substantial — and most important — credible lead over Internet Explorer 3.0 [CW, Aug. 19] in terms of cross-platform support, adherence to Web standards and general reliability.

With regard to performance, Navigator 3.0 appears in most cases to be the more responsive of the two in delivering Web pages quickly and with little fuss.

This new version of Navigator, which has been widely available in seven beta-test versions since early this year, sports several enhancements over the 2.x versions.

Among the most important additions to Navigator 3.0 are new support for multimedia and Internet telephony; enhancements to Web security; useful updates of the mail and news clients; upgrades to Sun Microsystems, Inc.'s Java and JavaScript — including a just-in-time Java compiler for 32-bit versions of Navigator; and various Hypertext Markup Language (HTML) improvements.

For those who stuck with earlier versions of Navigator or with other Web browsers that support only HTML, the new multimedia extensions in Navigator 3.0 — supplied as automatically installed plug-ins — will come as a surprise.

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PRODUCT REVIEW

	Overall rating	A
Multimedia		A
Extensibility		A
Cross-platform support		A
Third-party support		A
Usability		A
Performance		A
News reader		B
Mail		A

With new support for LiveAudio, LiveVideo, QuickTime and Live3D, Navigator 3.0 supports virtually every important video and audio format available on the Web.

On the audio side, which requires a multimedia system with sound board, users won't need to find and install separate players for the musical instrumental digital interface, AU, AIFF or WAV files that often are embedded in Web pages. Java and JavaScript support haven't been significantly upgraded, but the new 32-bit, just-in-time compiler speeds up the execution of Java applets on 32-bit operating systems.

Navigator 3.0 is a perfectly sensible browser for any user to install, trust and use. It is a solid browser, technically sophisticated and still considerate of Web standards.

Ray is an Internet consultant and writer in North Conway, N.H.

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CYBER JUNK

With E-mail, you can have way too much of a good thing

By Mitch Wagner

Users who make their E-mail addresses known in a lot of public places are finding that they are making lots of new friends. Friends who want them to "Buy!" or "Invest!" or just "Make money!"

Is this the future of electronic commerce? A steady stream of annoying electronic mail that starts out with come-ons such as "The more times you post, the more money you could make!"?

Junk E-mail, often known as spam, is the detritus of the commercialization of the Internet. Yet unlike paper junk mail, you can't toss it in your briefcase, bring it home and use it for kindling.

There is no measurement of how much spam gets out there, but experts say it is becoming more common as more log on to the Internet and online services.

Spammers like E-mail because it is cheap. With an Internet connection, you can send as much E-mail as you want.

And while E-mail recipients can filter out some spam, most of it will get through (see story at right). You can't entirely cut off junk mail without also cutting off E-mail from your co-workers, business partners and customers.

David Matton, a database researcher at The Mitre Corp., tries to maintain a philosophical attitude about spam.

"It's not all that big a deal when it comes right down to it. It's not something that ruins my productivity or anything," he said. "But it's just one more piece of crap that I don't want. It drives me up a wall."

"We didn't get this E-mail capacity so we could get solicited," said John Simmel, an information systems manager at American Airlines. "I get the same annoyance at that kind of mail as I get when someone calls to sell me something when I'm trying to get work done."

About the only thing users can do is keep spam in perspective and be quick on the delete key.

Spammers sniff out addresses using simple E-mail programs and use them to weed out their sales pitches. The most common method is to capture a few thousand headers from Usenet newsgroups, use a search utility to find the line that starts with "From:" and add the addresses contained

in that line to a mailing list.

Sometimes, spammers sell their address lists to one another and advertise those lists by sending out more spam.

Users unwittingly make themselves targets for spammers in a variety of ways, such as publishing their E-mail addresses on World Wide Web sites, registering with Web sites or signing up for mailing lists.

Another common channel for spam is Usenet, the universal discussion forum propagated worldwide over the Internet.

Unfortunately, there is very little penalty for sending out spam. On occasion, spammers get barraged with E-mail flames in reply. And conscientious Internet service providers will throw spammers off their systems. Sometimes, angry spam recipients will send megabytes of E-mail in reply to cripple the spammer's system — a revenge known as mail-bombing. But in these cases the spammer can simply move on to another system.

"What's the worst thing that can happen to you? You lose your account. You get some nasty E-mail. That's not much," said Barry Shein, a spam fighter and president of Software Tool & Die, Inc. in Brookline, Mass.

Tips to avoid junk E-mail

Y ou can't block all junk E-mail from reaching you without throwing away some mail you actually want to read. But you can take measures to keep some of the junk posts away. Here are some suggestions:

• Keep a separate Internet account for cruising newsgroups, joining mailing lists and registering for Web sites. Keep your main E-mail address private, like an unlisted number.

The downside: This gives you one more mailbox to keep tabs on.

• Use the automated mail-sorting feature in many mail packages to prevent E-mail from addresses of known spammers. You can also have it search for keywords such as "make money fast" and "moneymaking opportunity."

The downside: It'll be tough

to keep track of the keywords and spammers' E-mail addresses.

• Create a list of E-mail addresses that you want to receive mail from and have your software reject the rest. Screen out E-mail you want to see.

• Your company E-mail postmaster can block Internet mail from addresses known as sources of junk mail.
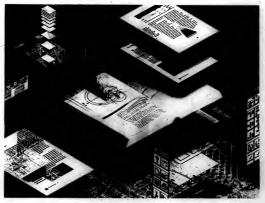
The downside: Same as blocking Internet addresses on an individual level.

• Finally, you can complain. If you get spam from a site, complain to the postmaster of that site. It's easy: If you get E-mail from somebody@somecompany.com, send your complaint to postmaster@somecompany.com. "Postmaster" is a standard address used for the mail administrator at most sites.

— Mitch Wagner

And speaking of Spam ...

Hormel makes client/server move

By Frank Hayes

Hormel Foods Corp. is jumping from a pure mainframe environment to a three-tier client/server system over the next three to five years.

This is a big move for the maker of Spam and Dinty Moore stew. The $3 billion company runs its mission-critical applications on IBM mainframes with IMS and DB2 databases. Hormel will re-engineer all its enterprise applications as distributed systems that use NatStar, a development and runtime system from Net Systems, Inc. in McLean, Va.

But Hormel's move may also signal the start of a wholesale shift in newer technologies in the food industry, which has largely resisted moves off the mainframe. Only a few other food companies have made that jump in a major way. One is Campbell Soup Co. in Camden, N.J., which began a complete conversion of its legacy systems last year.

Hormel's Dan Darveaux says food companies need to be more efficient

"The foods industry needs to change its business practices to be more efficient, and this means we're all building new systems and making massive changes in existing systems," said Dan Darveaux, director of information systems at Hormel in Austin, Minn.

Similar shifts over the past several years have forced other industries to turn to client/server systems, but the food industry has dodged much of that pressure until now, said Bruce Bond, an analyst at Gartner Group, Inc. in Stamford, Conn.

But the inflexibility of mainframe-based applications will force many companies to make a move over the next two years, he said.

For Hormel, the decision will put PCs on users' desks and enterprise applications on a network of servers, Darveaux said. The company over the past decade has bypassed software development technologies that range from computer-aided software engineering to visual development tools, deeming them not mature enough. Besides, the legacy systems kept Hormel profitable over the past decade.

But the aging systems aren't flexible enough. "Our core systems are relatively old, and we want to make some major investments in them," Darveaux said. He wouldn't disclose how much Hormel expects to spend on the systems.

Hormel will retrain between 30 and 50 IS staffers to develop and run the rewritten applications, he said. When the process is complete, all of Hormel's enterprise systems will have been migrated off the mainframe.

Hormel Foods is adopting a client/server environment

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Computer Industry

Feds to abandon SQL compliance testing

Users worry that vendors will forsake standards

By Gary H. Anthes

The National Institute of Standards and Technology's (NIST) plan to discontinue its testing of SQL products for compliance with ANSI standards has left mixed reactions in its wake. Some SQL watchers were blasé, but others expressed concern about a move to proprietary systems.

NIST, an agency of the U.S. Department of Commerce, for years has actively helped develop standards for data management software, including the SQL relational database language. It also develops tests for SQL standards compliance and tests and certifies products. Vendors pay NIST for the tests but not enough to fully cover the program's cost (see chart).

Without making a formal announcement, NIST has let standards groups know it won't develop test suites for advanced levels of SQL or for SQL enhancements. It also will discontinue the testing of SQL products, said Mark Skall, chief of software diagnostics and conformance testing at NIST in Gaithersburg, Md.

"But we are not going to get out of operational testing until someone in the industry is willing to take it over," he said. One candidate is the Institute of Electrical and Electronics Engineers, Inc.

In a study commissioned last year by NIST, TASC, Inc. in Arlington, Va., found that the agency's SQL program produced a whopping 41% "economic rate of return" on investment. As a result of the program, "society has realized increased market competition and a lower average price for SQL products," the consulting firm concluded.

The testing gives users a "comfort level," said Warren Capps, past president of the Mid-Atlantic Oracle Users

Group. Possibly because of that comfort level, SQL vendors won't diverge from SQL standards any time soon, predicted Wayne Kernochan, vice president of commercial systems research at Aberdeen Group, Inc. in Boston.

Roger Sippl, a founder and past president of the X/Open SQL Access Group, agreed. He said the loss of the NIST certification program isn't serious because any vendor that deviates from standards will be punished in the marketplace.

Still, Kernochan expects that over time vendors may put other criteria — for example, performance in handling multimedia queries — ahead of strict standards compliance.

Worry beans

Some users and vendor groups are concerned. "This is almost certainly going to result in a divergence of products in the marketplace, to the detriment of the user community and the market at large." said Don Deutsch, chairman of the American National Standards Insti-

tute's SQL committee and director of standards strategy at Sybase, Inc.

"I am concerned about NIST backing out of this business after having had a bunch of expectations in the marketplace," said James de Raeve, manager of testing at Open Group in Cambridge, England. "The net result is a test tool that ceases to be relevant after a period of time as the standard moves on."

The Administrative Office of the U.S. Courts in Washington has issued a request for bids for relational database management systems. It specifies that proposed products must be certified by NIST along with SQL standards.

"We've found the NIST test suites and certification process very valuable in helping us sort through the products out there," said Steve Beckman, chief of the Application Development division at the Administration of the U.S. Courts. "If they didn't do it, we'd have to do it or pay someone to do it."

NIST pays off

Financial performance of NIST SQL conformance test program since 1989

Total cost
Test cost
Test suite
Net costs
Compliance
Benefits

Source: TASC, Inc., Arlington, VA.

Lotus accelerates CC:Mail development

By Tim Ouellette

Lotus Development Corp. is sending the message to users that basic electronic mail is here to stay.

The Cambridge, Mass., firm next month will ship Version 7.0 of CC:Mail and plans to improve wide-area management tools for CC:Mail by year's end. On tap for next year are further full product upgrades, most significantly the addition of support for Internet messaging standards and tight integration with Microsoft Corp.'s Windows NT Server and group calendaring products.

Down the road, Lotus is also looking to add Java support to CC:Mail for the Web, a product that lets users access E-mail from a World Wide Web browser.

CC:Mail, with more than 10 million users, has long been the mainstay of Lotus' messaging strategy. But the improved messaging in Notes gives users a combination of E-mail and groupware and has many customers wondering about the future of CC:Mail [CW, March 3].

To allay those fears, CC:Mail 7.0 will offer a 32-bit client with full support for the Messaging Application Programming Interface standard.

A sea of CC:Mail

- Add support for the Internet Mail Access Protocol and Lightweight Directory Access Protocol, along with Internet standards for calendaring and newsletters

- Integrate better with Windows NT to compete with Microsoft Exchange

- Beef up wide-area management tools for CC:Mail by year's end

- Integrate the Organizer and CC:Mail data stores so both messages and scheduling information are in the same format

- Add the scheduling piece of the Organizer interface to CC:Mail

This lets the CC:Mail client access non-CC:Mail message stores such as Microsoft's Exchange Server.

Lotus' commitment is good news to

users who don't want to install a whole groupware infrastructure.

A recent survey of corporate information systems managers by UK-based research firm Xephon found that almost half have no groupware plans, and price is a major reason for the CC:Mail costs $55 per user, while Notes costs $55 for each client and $495 for the basic server. This doesn't include extra integration and programming costs associated with Notes installations.

And for those using groupware, E-mail applications still accounted for more than half of all groupware use.

Middle-of-the-road

Lotus officials say the adherence to groupware by vendors such as Novell, Inc., Microsoft and Netscape Communications Corp. has opened a middle ground for CC:Mail. Thus, Lotus' strategy is to focus CC:Mail at middle-tier and smaller accounts, said Larry Jones, CC:Mail's marketing director, while still catering to large companies that have traditionally run CC:Mail.

Hitachi Ltd. in Japan, which has the largest CC:Mail installation with 85,000 users, spent three months reviewing its messaging strategy before sticking with CC:Mail.

Briefs

Bulens bolts from Lotus

Don Bulens, former head of Lotus Development Corp.'s 12,000-strong Business Partner program, has signed on as CEO of World Wide Web-based groupware maker Radnet, Inc. Notes' success has been largely due to the huge channel Bulens oversaw. Radnet, located just down the road from Lotus in Cambridge, Mass., plans to develop a similar channel for its WebShare product.

Java fund raises $100 million

Venture capital firm Kleiner Perkins Caufield & Byers, a backer of Netscape Communications Corp., has created a $100 million fund to invest in companies developing software and products for Java. The fund has already invested in several companies, including Active Software, Calico Technology, Inc. and Marimba, Inc.

CompuServe loses $30 million

CompuServe Corp. has posted a fiscal first-quarter loss of $29.6 million. First-quarter revenue grew by 12% to $208.6 million, up from $186.5 million. The company plans to cut 150 jobs.

COMPUTERWORLD AUGUST 26, 1996 (www.computerworld.com)

■ COMPUTERWORLD

intranets

THE MANAGER'S GUIDE TO WHAT'S REALLY IMPORTANT

PROJECTS — Lockheed Martin brings intranets to 70,000 global users. Annual savings from policies and procedures: $500,000.
Page 4.

ADVICE — IS should own the intranet infrastructure but think twice about content management.
Page 4.

EXPLAINER — Our exclusive survey finds IS taking a leadership role — especially in intranet funding — but working closely with users.
Page 8.

Role Models

BY ROBERT L. SCHEIER

No more Rodney Dangerfield. Done right, intranets can boost respect for IS by making user jobs easier. But there's no single best role for technologists.

Smart approaches stress user enablement and build on IS expertise in the infrastructure of PCs, LANs and client/server. Losing roles: content provider, standards dictator.

Here are three good ways IS can lead — and one to avoid.

Content Control

Prophet

Role: Stir the waters, teach users to fish.
Example: David Sarnoff Research Center in Princeton, N.J.

Corporate IS provides network backbone, development and publishing tools, and guidelines. User "information content providers" create new intranet-based applications.

"Our strategy is to make people want to use the intranet," says webmaster Joel Ruffin. "Instead of saying, 'We're the champions of this technology,' we say, 'What are your ideas? Let your mind run wild.'"

Possible upside: Good rapport with users; big kudos for IS if low-cost intranets give competitive edge.

Downside risks: Choosing Web technology platforms that can't scale as business grows; hot seat if efforts fail to boost revenues.

Team Player

Role: Suit up with other functions to help set standards, develop apps.
Example: Health Data Sciences Corp.

IS sits on an eight-member committee that sets the San Bernardino, Calif., company's Web standards and development priorities. Other members are from marketing, product development and human resources. User departments control content.

An IS-developed intranet will serve

as a model for others in the company, says Greg Niemiec, manager of information services.

Upside potential: Good rapport and credibility with users. All sites get a uniform look and feel, thanks to standard Web page model. IS avoids extra headaches because departments control content.

Downside risk: In some organizations, committee management could break down when dealing with bigger, more complex intranets. Departmental intranets can clog networks. Who pays for infrastructure upgrade?

Helping Hand

Role: Support core Web technology, hand out best practices for content.

Example: Weyerhaeuser Co.

Corporate IS taken technical charge of 4,000-user global intranet that provides information on company, customers, competitors and projects. It also sits on a cross-functional team that sets standards for Web technology and content management.

"We make it easy for people to do things in a productive and efficient way, as opposed to controlling or constraining what they do. We encourage the development of [content] standards," says John Anderson, director of technology assessment and planning. "But those aren't IS standards."

Weyerhaeuser splits intranet management roles by classifying content as either "official" or "unofficial." Official content is posted on the companywide server, contains links to other sites within the company and must meet corporate look-and-feel guidelines. Unofficial content appears only on a departmental server and is subject to only departmental review.

Upside potential: IS is seen as an enabler of, not an impediment to, business goals. Empowered, innovative users. IS shares in credit for big boosts in companywide coordination and communication.

Downside risk: Increased IS work-load if departments refuse to pay for increased support and training. Also, decentralized development can cause headaches with incompatible Web servers and database access middleware.

Avoid!
Ignored Parent

Role: Slow disciplinarian.

Example: Symix Systems, Inc., a manufacturing and accounting software developer in Columbus, Ohio.

A user department created its own intranet to develop project plans and design requirements to 12 to 15 developers. Reason: Concerns about quick IS delivery and fear of pressure to store pages on corporate server.

Explains Chuck Krisak, development adviser: "Our being able to disseminate information was our problem — not an IT or corporatewide problem. Anything we were going to do to hurt us network [performance]-wise — we were just going to hurt ourselves."

Upside potential: IS stock rises by rescuing failing departmental intranet.

Downside risk: Things work just fine without IS, which erodes technical department's credibility and increases department's isolation.

Scheier is a Computerworld *senior editor, management.*

ADVICE

By Collette Canal
Principal, Ernst & Young

Canal leads Ernst & Young's Center for Technology
Enablement. The organization has done three dozen
intranet/Internet projects for global companies.

ROLES: There are some real challenges here.
Most organizations haven't fully wrestled to the
ground the question, "Who really should own the
content?" Clearly, IS owns the infrastructure.

Many people have placed the webmaster in IS.
And the webmaster has a growing responsibility

for content management.
Unfortunately, IT people have
never been good at content
management. That's not their
role. Right now, someone
might make more sense logs set up to date, but
some of those pages need to be corrected and
updated.

TOOLS: Part of the challenge is that tools for man-
aging intranet and Web content are so few and
immature. It's like client/server 10 years ago. Until
tools reach maturity, managing the cost and the
links is going to outpace what anyone predicted.

We may need a new function that would review
new content. Take pricing. Customer service reps
need up-to-date price information, and they need
to know about sales or promotions. Linking mar-
keting with customer service isn't done today.

You need to manage all that and make sure
information is relevant. And inappropriate informa-
tion isn't on the site. Companies are going to have
to invest heavily in this kind of activity.

FOCUS: Don't let canned product announcements
distract you from the need for a solid infrastruc-
ture. Put some stakes in the ground. You'll choose
Windows NT or a Sun network operating system, a
decision that focuses on what you can do have a
Web server and a database perspective. The far-
ther you get from the server, the more difficult it is
to make a decision that will last 12 months or
more. Put a stake in the ground for core technolo-
gies, and refresh on the image.

PROJECTS

Lockheed Martin Corp.

Bethesda, Md.
Created by the 1995 merger of Lockheed
Corp. and Martin Marietta Corp., it is the
nation's largest defense contractor.

Andrea Pair, director of plans, policies and
procedures at Enterprise Information
Systems Co. (EIS), a division based in
Orlando, Fla.:

What they're doing
Using intranets to disseminate informa-
tion to 70,000 of the company's 190,000
employees. Individual departments and
units have their own home pages. "I'd say
there are at least 50,000 home pages. We
have [internally developed] search engines
that will index them for you if you are
looking for a particular topic," Pair says.

Costs/Payoffs
Lockheed Martin doesn't have hard cost
numbers, but Pair says the EIS WebServ
group is spending "about $50,000" to set
up a server that will run Web pages so
internal users don't have to buy their own
servers.

Other projects are cost-justified on a
case-by-case basis. Pair says Lockheed
Martin has saved more than $600,000 per
year in paper costs.

Biggest people challenge
Getting upper management comfortable
with the idea that employees weren't going
to abuse the system. Pair's group has creat-
ed an educational packet for meetings with
executive staff that focuses on basic infor-
mation and security concerns.

Biggest technology challenge
Security, particularly for Lockheed
Martin's energy-oriented units, which are
connected to the Department of Defense
network. "If we let them in to our intranet,
it would mean that everybody in the DOD
network would have access to our
intranet," Pair says. So Lockheed Martin
has, in some instances, given the energy

companies access to a server with a strictly
controlled subset of intranet information.
For other parts of the company, configur-
ing and outfitting 70,000 PCs with soft-
ware presents a major challenge.

Tools used
486-class PCs, Macintoshes and Unix box-
es, in "various and sundry configurations."
Netscape Navigator is the browser.

Next steps
Develop guidelines for Web publication.
Look into eliminating all paper forms in
favor of making them available through
the intranet. Look into using Web technol-
ogy to create a front end to Lockheed
Martin's "heritage" applications.

By Steve Alexander, a freelance writer
in Edina, Minn. He can be reached at
serion@ix.netcom.com.

LOCKHEED
MARTIN'S
ANDREA
PAIR:
"I'd say there
are at least
50,000 home
pages."

Netscape's James Barksdale on Informix.

James Barksdale
*President and CEO,
Netscape
Communications*

"Netscape partners with Informix because of its unique Web database technology.
Together, we provide customers an ideal solution for next-generation, high-performance, content-rich Web applications."

Jeff Hudson
*VP of Business
Development,
Informix*

"The Web requires a database that combines high performance with the ability to manage a wide range of new datatypes—image, video, text, geo-spatial, and more. Informix and Netscape enable customers to quickly develop powerful, innovative Web applications that meet any business requirement."

At Informix, we deliver innovative database technology for a growing number of industry leaders worldwide. By teaming with companies who share our vision, we provide our customers with the solutions they need to stay ahead of change, make the most of emerging opportunities, and gain a competitive edge in business.

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Only Intranet News' Service delivers all the intranet news that's fit to digitize from new

sources in North America and Europe. Still not enough? Check links to other related sites. Sunwave, Inc. Details: www.sunwave.com/news/index.html; phone: (613) 228-5116

REPORTS

The Netscape Intranet Vision and Product Roadmap: "A clear guide to the Land of a Thousand Releases. Online: home.netscape.com/comprod/at_work/white_paper/intranet/

vision.html. Email, info@netscape.com, phone: (415) 937-2555.

Never one to be intimidated by a big URL, Microsoft Corp. offers its intranet strategy at www.microsoft.com/intranet/documents/msintwp/intranetTOC.htm.

And for information on intranets and Office 97 try the links from www.microsoft.com/msoffice/.

EXPLAINER

Intranet Roles

Most organizations are still working out the most effective ways to develop and maintain intranets. In most cases, IS is taking a leadership role but working closely with users.

Computerworld Intranets recently polled 75 CIOs and senior IS executives in leading organizations about intranet roles and responsibilities. Their answers follow.

Applications Development

2.7%
4.3%
10.4%
45.8%
27.1%

User Skills Development

2.3%
18.9%
5.1%
27.3%

Content Management

Standards and Guidelines

2.7%
11.5%
27%
18.8%
40.2%

Budgeting and Funding

2.4%
7.1%
11.9%
16.7%
22.6%
39.3%

Legend:
- IS totally responsible
- IS leads/users assist
- Joint IS/users responsibility
- Users lead, IS assists
- Users totally responsible
- Not being done

ONLINE

Visit our Web site at www.computerworld.com/intranets for links to intranet resources or to consult our glossary.

Numbers may not total 100% due to rounding.

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Standards and Guidelines

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ONLINE

Numbers may not total 100% due to rounding.

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to fail anywhere. It's all part of what we

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Manageability. Among other things, it

Editorial

Exterminator

Netscape is accusing Microsoft of trying to exterminate it. But the question I have is why Microsoft would want to do such a stupid thing.

In a scathing letter to the U.S. Department of Justice dated Aug. 12, Netscape accused Microsoft of all sorts of anticompetitive sins, including pressuring PC makers to favor its Internet Explorer browser in exchange for price breaks; offering corporate customers irresistible operating system deals if they would discourage the use of Netscape's Navigator; and imposing licensing terms that restricted customers from using any-thing other than Microsoft Internet products. Nothing has been proved, and Microsoft has dismissed the whole thing as a publicity stunt.

If the charges are true, though, they paint a picture of Microsoft as a software velociraptor bent on ravaging its enemies, which would be really dumb. The fact is, Microsoft can stamp out Netscape if it really wants to. The company has the cash to give away software for as long as it takes to win dominant market share. If innovation fails, it can simply outlast the competition.

But why would it want to? If Microsoft owned the Internet browser and server market, it would invite intense government scrutiny, which is the last thing it wants right now. In fact, Microsoft is so nervous about antitrust action that it is reportedly trying to shore up the Macintosh third-party market through a clandestine business group. It's hard to imagine why it would try to roll over a healthier competitor at the same time.

It is in Microsoft's best interest that Netscape remain an aggressive, vigorous rival. If Microsoft is resorting to nefarious tactics to kill this competitor, then its priorities are out of whack. Microsoft people like to brag that they are "paranoid," but paranoia shouldn't lead to extermination—at least not while the government has an open file on you.

Microsoft has asserted that its sales tactics aren't anticompetitive because consumers enjoy low prices and innovative products. Evidence of a conscious effort to extinguish a healthy rival would blow that argument apart. The elimination of Netscape would end the torrid pace of innovation that the Internet market has seen in the past 18 months. It would expose Microsoft to an unprecedented scrutiny and unnerve consumers. I just don't see why Microsoft would do it.

Paul Gillin

Paul Gillin, editor
Internet: paul_gillin@cw.com
Internet: www.sitenet.com/~pgillin

Cyrix received unfair grade

I am writing to express my surprise at the C+ grade given to the Cyrix 6x86-P166 in "Big problem doesn't KO Cyrix PC" [CW, July 29]. It is unfortunate that the machine tested had a faulty power supply, and I can sympathize with the frustration of the reviewers in solving the problem. But surely an isolated problem such as that doesn't warrant the whole product line being given this low grade.

The reviewers call the Cyrix machine "impressive" and "ideal-ingly fast" and show that it out-performed a comparable Pen-tium-based machine in every case. In short, the machine per-formed exceptionally once the power supply problem was solv-

ed out. Why the low grade? Were James Connally and Tom Lannon-Jesus just grumpy that day?

— Ken Morton
Houston, Mass.

Reviewers' reply: No, we weren't grumpy. But it would have been a disservice to potential buyers to ignore a serious power problem. We had no way of being 100% sure it wasn't more common. As with any review, we had the one machine to work with and had to have a grade on that system.

To be fair, we then went the extra distance to seek out Cyrix and other users for feedback. If the prob-lem hadn't come up, the score surely would have moved up a notch or two.

CMA holds strong after 50 years

Your recent Page 1 article ["User groups strive to survive," CW, July 15] paints a rather bleak portrait of user groups present and future, citing only one example of a group that has experienced membership growth in the past two years.

The Communications Managers Association (CMA) has provided education to telecommunications, networking and information systems end users for nearly 50 years and is experiencing strong and healthy growth. Perhaps that is because CMA is sensitive to the very pitfalls outlined in your article. CMA pro-grams are developed by users, for

users. And that is why more than 700 telecommunications/informa-tion technology professionals from more than 200 firms are members.

— Matthew O'Brien
CMA president

— Tony Lazzaro
Senior analyst
Prodigy Services Co.
obrienm@prodigy.com

Shifty moves

I enjoyed Paul Gillin's editorial that had the bit on paradigm shifts ["Paradigm drift," CW, Aug. 5]. It seems to me the vendors' siren song of paradigm shifts is really about get-ting that "pair of dimes" shifting out of your pocket and into theirs.

— Sean Nyberg
Tampa Fla.

Isn't it ironic?

Am I the only one who sees the irony in "Year 2000, client/server linked" [CW, July 22], in that for the past 10 years, those of us who worked on main-frame (legacy) software and were trying to make people aware of the problem were told, "There is no year 2000 problem. Those mainframe sys-tems are going to be replaced by client/server systems anyway."

The reason there is a year 2000 problem is the client/server hype that discouraged people from taking corrective action on the problem.

— Kishor Bapat
Newbury Park, Calif.

Foolish thoughts

After reading "NT 4.0 beats clock" [CW, July 22], I called the local Egg-head [Software store] and asked when it would have NT 4.0 in stock. "Our Microsoft rep was here this morning, and he promised 4.0 in Oc-tober," the salesman replied.

I quoted the *Computerworld* arti-cle, and his response was, "You're a fool to believe anything Microsoft says." So it goes.

— Mike Neal
Director of network services
School of Business Administration
Portland State University
Portland, Ore.

Computerworld welcomes comments from its readers. Letters should not exceed 200 words and should be addressed to Paul Gillin, Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931. Internet: letters@cw.com. Please include an address and phone number for verification.

M. Arthur Gillis

Opening soon: Microsoft National Bank

I f Bill Gates can persuade the Justice Department to go easy on Microsoft's monopoly in PC operating systems, just imagine how easily he could persuade regulatory agencies to grant him a bank charter. Give up a few tons of documents, hold several meetings that consist of stiffy bureaucratic bantering and — voila! — he's got an $18 billion de novo bank with millions of online "branches" overnight. And not a trowel of mortar needed.

Why speculate about the notion of a Microsoft bank? Because Gates is an impatient man. He doesn't believe bankers are moving fast enough to make home banking a success. The entrepreneurial instinct of such a highly successful person suggests that if conventional approaches don't work, he will bypass them and take over. Gates is a bellwea marketer and promoter; he could sell the concept with panase.

There's also a bit more to this proposition than meets the eye. A recent phone call from Microsoft's lead person in the home-banking fray revealed some interesting insights. First, the only reason this well-informed and well-connected gentleman called me is that he knows how I feel about home banking — it's a solution searching for a problem. I think he'd trying to swing me (and at least one other highly visible skeptic) over to his camp.

Second, the executive said, home banking has to be sold aggressively by banks. He figures consumers aren't likely to rush in and sign up. He's

absolutely correct about the absence of a rush. The part about having to sell online banking aggressively to consumers worries me. If that's the case, then home banking is a cat that has already used up eight lives in the past 25 years.

Every major bank has tried home banking and has failed. If the last chance depends on the popular banker's sales skills, then home banking is dead for sure.

Consumers are smarter than ever. Give them good reasons to switch, and they don't have to be pushed. Home banking doesn't yet provide compelling reasons.

Today's consumers are in love with the checkbook. They aren't complaining about checks. (Banks, of course, hate checks because they're expensive to process.) Consumers don't want to expose their spending habits on the Internet, either. They just aren't ready to say, "I think I'll jump on the Internet today and pay my bills."

The promoters of home banking point to sur-

veys that show the increasing penetration of PCs in U.S. households. But that doesn't mean those PCs will be used for online banking. If a poll said 80% of U.S. homeowners have a back yard, does it mean they all want to plant tomatoes? Even banking's technocrats don't do online banking when they go home.

If compelling reasons to bank from home are missing, then the next best chance for success will depend on a cultural shift.

Maybe the future yuppies, who are now in grade school, will embrace home banking just because it fits in to their electronic lifestyles.

The "Gomwutser" — grumpy old men with all the money — will eventually fade out of the picture.

Home banking is a sure thing, once we find its right decade.

Gillis is president of Computer Based Solutions, Inc., a banking technology consultancy in Dallas. His Internet address is artgillis@aol.com

Microsoft plans to push online banking, but consumers just aren't ready.

Thornton May

Too many experts, not enough expertise

T he digital future has fallen into the clutches of the schmooze-oisie — pseudo experts engaged in content-free opinionizing.

The life and career of every CIO, technologist and end user is affected by wave after wave of high-priced, frequently wrong and rarely value-producing "expert" opinion. Survival in the high-hype economy requires that we figure out what to do about the experts who aren't.

The half-life of expertise has compressed. Every month, organizations must assimilate modest product line extensions into their technology base. Every six months, a major systems upgrade is required. Every nine months, a fundamental technology mutation emerges from the vendor community. Is this rapidly recompiling world, one knows how the experts keep up — what magic process do they use to stay on top of the intellectual food chain?

The pace of change, combined with corporate America's reduced bench count (i.e., fewer heads to figure out the business implications of discontinuous technological developments), produced a period of good living for phrase-meistering technology analysts. But of late, the punditry market has balkanized into a confusing labyrinth of antisperialists and micromarkets.

The trade journals and rubber-chicken conference circuits are awash with experts for hire. Serious managers who seek to solve serious problems can't be sure who's worth paying attention to. So a new breed of expert has emerged: the expert on experts — the meta-expert.

This goes too far.

The expert biomass has reached a point of Malthusian unsustainability. Empirical evidence is pretty damning. Though the experts don't agree as much, they do share an inability to get the future right. Remember: The PC was supposed to make our lives simpler, client/server technology would reduce the total costs of computing and the World Wide Web would be used to sell things. The sad reality is that large organizations will spend billions of dollars on bad consulting advice.

Call to action

American CIOs, the children of the new cyberfrontier, are no longer standing by passively while noisy, matrix-toting child-gurus assault rationality, obfuscate technology futures and consume scarce corporate resources. The CIOs are saying, "Give us value or get the gone, sound-bite-rich parasites!"

Successful organizations — which deliver su-

pranormal returns to shareholders and above-expected service to customers — have concluded that we live in a world with no Solomons. Smart companies are taking responsibility for figuring out the new value equation by themselves.

World-class companies have ceased the pursuit of gurus and are concentrating on demonstrating unambiguous progress toward their business objectives. They are rooting out the vestiges of non-producing expert worship and setting up "mind share firewalls" to keep out the charlatans.

With expertise comes responsibility. Insightful organizations require their experts to take an equity participation in the rollout of their guidance. Indeed, several organizations now require that benefits actually materialize before the experts collect their fees. Real experts guarantee their work.

Experts have a responsibility to create knowledge, whether in the library, the laboratory or the workplace. Experts should be dedicated to developing the capacities to reflect, create and understand. Whereas today's manure of expertise is how much you charge for a speech, in the post-hype economy, we need men and women who can elevate our sights and ennoble our efforts.

May is vice president of research and education at Cambridge Technology Partners, Inc. in Cambridge, Mass. His Internet address is tmay@ctp.com.

CIOs should beware of pseudo experts engaged in content-free punditry.

HOW CAN

In order to make the right decisions, you've got to have
the big picture. But where is it?

What computing solutions do you have?

Servers & PCs

Power portables

133-MHz systems from Compaq, Gateway are solid laptop performers

By Chris DeVoney

Even as 150-MHz Pentium machines take charge at the high end of the notebook sector, new 133-MHz systems from Compaq Computer Corp. and Gateway 2000, Inc. hold their own. The $4,999 Compaq LTE 5300 and $5,599 Gateway Solo 133 don't offer the most features, smallest footprint or lightest case, but they have enough power to handle most tasks.

PRODUCT REVIEW

Compaq's 5300

The LTE 5300, part of Compaq's full-size notebook line, weighs 8 pounds in the office (12 pounds when traveling with accessories), which is typical for portables that emphasize power over weight.

The 12.1-in. thin film transistor (TFT) display with its 800 by 600 resolution and 64,000 colors offers solid, crisp characters and good dynamic color range for presentations or full-motion video. The large keyboard has a comprehensive layout. The "eraser-head" pointer and buttons are comfortable to use.

Like other portables — including the Gateway 2000 Solo — the LTE 5300's 1-in. speakers deliver sound that a small group should be able to hear but that is too quiet for anything else. The solution

is to plug in external speakers to one of several standard ports. The unit's flexible MultiBay add-in slot can hold a 3.5-in. floppy drive, a 5.25-in. floppy drive, a four-speed CD-ROM drive, a six-speed CD-ROM drive, an additional hard disk or a second lithium-ion battery. You can also shed the weight by leaving the bay empty.

Although the Multi-Bay holds one device at a time, you can swap the floppy and CD-ROM without restarting the system under Windows 3.1, Windows NT 3.51 or NT 4.0. But you are out of luck with Windows 95, which doesn't allow such hot swaps.

Our unit was equipped with a swappable 1.35G-byte hard disk, a six-speed CD-ROM drive, a 3.5-in. floppy drive and 16M bytes of RAM. The LTE maxes out at an incredible 80M bytes of RAM.

The unit's performance was excellent. Although the video performance, measured using standard benchmarks, is about a fifth that of a desktop unit, the overall performance is on par with the fullest-featured — and one of the fastest — 133-MHz laptops we have seen. Toshiba America Information Systems' 720CDT.

Our only complaint was with the MPEG/TV adapter, an option that adds $599 to the LTE's price. It came with device drivers that were corrupted. The adapter offers hardware playback for MPEG and CD-V movies on the computer, an external monitor or a television. Also, the adapter captures single-frame or full-motion video from NTSC or S-Video sources. Drivers delivered overnight by Compaq solved our problems.

In all aspects, the LTE packs enough of a wallop for office, programming, presentation or communications tasks. Short of computer-aided design and manufacturing (CAD/CAM) applications, which would need a faster display, the LTE could be a solid replacement for a desktop system.

Gateway's Solo 133

Don't be fooled by the seemingly high price of this unit. It is justified because the Solo 133 packs more into its 8-pound frame (10-pound travel weight) than you would imagine.

The Solo has an 11.3-in. TFT display with 800 by 600 resolution. Although that is smaller than the screens found on comparable portables, the characters are crisp, and the color dynamic range is adequate. But the drivers support only 256 colors rather than the 64,000 colors supported by most notebooks.

Overall grade
A-

LTE 5300

Compaq
www.compaq.com
Price: $4,999

Overall grade
A-

Gateway 2000
www.gw2k.com
Price: $5,599

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Thanks for the memory: DG, Unisys to share technology

By Michael Goldberg

A technology-sharing deal recently announced by Data General Corp. and Unisys Corp. should help those vendors bring greater scalability to their multiprocessing servers, users and analysts said.

Under the pact, DG will make its NumaLine shared memory technology available to Unisys to use in its symmetrical multiprocessing (SMP) servers. In turn, Unisys will let DG include its Scalable Coherent Memory bus technology in its Aviion servers.

DG, in Westboro, Mass., and Unisys, in Blue Bell, Pa., are using the technology in computer families that use Intel Corp. processors. And both companies are emphasizing their support for the SCO, Inc. UnixWare operating system, although DG will continue to support its own Unix variant, DG-UX.

Savings shared, too

Sharing those important traits lets the companies pass along engineering cost savings to users while offering servers that potentially could scale to dozens of processors, analysts said.

"By hook or by crook, these companies were going to have to do these things anyway. And by doing it as a business relation-

Symmetrical multiprocessing

ship, they'll get it done faster," said Jonathan Eunice, president of Illuminata, Inc., a research firm in Nashua, N.H.

For users, the deal "translates to better performance, higher availability and more scalability — things that end users are looking for as they move from PC LAN environments" up the enterprise computing chain, said Jerry Sheridan, a principal analyst at Dataquest in San Jose, Calif.

Users said they were generally upbeat and added that they saw the companies' move to embrace Intel as an important long-term business decision, even if it presents challenges in future migrations from older technologies.

"From my perspective, it's very positive. The Motorola [chips that DG was using] were at a dead

Impact of the deal

- DG will use Unisys' Scalable Coherent Memory bus in its Aviion servers
- Unisys will use DG's NumaLine technology in its symmetrical multiprocessing servers
- Users should see more scalable computers at some cost-savings from the two vendors

end, not going anywhere," said Juan Fernandez, director of MIS at Cigna Dental Health, a dental health maintenance organization in Plantation, Fla.

"DG is making the right move for their company," said Bob Ostrow, a vice president at Bloomberg Financial Markets in New York, another longtime DG user. "If they can improve price/performance, that's even better."

Cigna and Bloomberg use earlier versions of DG's NumaLine servers that run with Motorola, Inc. processors and the DG-UX operating system.

NumaLine contains NUMA technology, for Non-Uniform Memory Access. NUMA uses memory-sharing techniques across processing units to give a system with many processors a single-system image. That means customers can use applications for an SMP system in computers that have large numbers of processors without rewriting their programs.

DG's first NUMA-based servers that use Intel's Pentium chips are due late this year or early next year. Unisys officials said their company's versions will follow quickly.

Observers said DG would use Unisys' Scalable Coherent bus technology to bring out a server that uses Pentium Pro chips — up to 10 processors in one box — more quickly than planned.

Centralized storage management across platforms on the rise

By Jaikumar Vijayan

Storage vendors are accelerating their efforts to offer centralized storage management capabilities across multiple hardware platforms and operating systems.

Last week, for instance, Seagate Software Storage Management Group became the latest vendor to jump into play, with a product aimed at networks that run both Microsoft Corp. Windows NT Server and Novell, Inc.'s NetWare operating systems.

The company's latest Seagate ExecView software can be loaded on either an NT Server or a Windows 95 client and lets network administrators monitor scheduled, active and completed backup operations from a central console. The product also lets administrators identify and respond to backup operations that require attention.

Increasingly common

Those kinds of management capabilities are becoming standard features in storage products as user environments become increasingly complex, analysts said.

For instance, vendors such as IBM, Cheyenne Software, Inc., Legato Systems, Inc. and Sterling Software, Inc. offer varying levels of centralized storage management across different hardware platforms.

"For any software utility to survive in a multiple platform, multiple operating system environment, it has to be compatible all the way across," said Robert Abraham, a key president at Freeman Associates, Inc., a market research firm in Santa Barbara, Calif.

"Users are simply going to demand and take for granted that this kind of capability will be pro-

vided" in storage management products, he said.

One such user is Belcan Engineering in Cincinnati. The company, which uses five NT and NetWare servers for backup operations, welcomes cross-platform management products such as Seagate's ExecView.

"It used to be a nuisance to go to each server individually to check if everything was running properly. ExecView allows me to do the same thing from one spot," said Paul Budowski, senior network specialist at Belcan.

Backing up the enterprise

Backup Exec for Windows NT v6.11
• SQL Server
• Exchange Server

Backup Exec for NetWare v7.11
• NDS support
• SureStart startup environment

Seagate ExecView v2.01
• Cross-platform functionality
• Real-time statistics and alerting

The new software will be available later this month in 5-, 20- and 50-server versions. Prices start at $1,295 for five servers, $3,595 for 20 servers and $5,595 for 50 servers.

In addition to Seagate, Seagate last week also announced Backup Exec for NetWare version 7.11. The release includes many enhancements over the previous version, including full integration with Novell's NetWare Directory Services start-up diagnostics and support for the NetWare Administrator utility.

The screen is acceptable for many applications but inadequate for showing photorealistic images — as with some presentations or multimedia products — or using mundane software such as the Windows 95 Plus Pack's font smoothing, which requires 16-bit color depth.

The Solo's keyboard isn't as big as the LTE's, but it is the same size as most other notebook keyboards and is as comfortable as most. The 2-in. square touchpad pointing device and buttons get a favorable nod, but you might want to try out the touchpad before buying if you aren't familiar with the concept. It provides strong reactions, pro and con.

The Solo wasn't designed with the flexibility of the LTE. The unit

can hold either a 3.5-in. floppy or a CD-ROM at one time, but not both. Unlike the LTE, you can't hot-swap drives, which makes installing some device drivers or Windows NT 4.0 frustrating because you may need floppy disks and a CD-ROM to load those drivers.

For $3,589, you get a 1.35Gbyte hard disk, a 1.44M-byte floppy drive, a six-speed CD-ROM drive and two batteries (each lasting about two and one-half hours). Don't expect this notebook to replace a desktop machine because it includes a soft case for the floppy/CD-ROM that isn't mounted in the computer: a comfortable carrying case, a 28.8K bit/sec. fax/modem PC card, a choice of Windows or Windows NT, Microsoft Office and a variety of other utility and communications software. It also sports a whopping 40M bytes of

RAM — an amount you don't see in other notebooks at this price.

That 40M bytes plays a big role in the Solo's performance. Under Windows 95, the Solo 133 was an astounding 50% faster than the Toshiba 720CDT or Compaq LTE 5300 when running 16- and 32-bit applications. Some of the Solo's performance is owed to paltry color depth. But programs under Windows 95 or Windows NT get solid benefits from the capacious RAM.

DeVoney is a technology writer in Seattle.

Brief

Sun unveils fault tolerance

Sun Microsystems, Inc. introduced a pair of fault-tolerance servers based on its SPARC architecture and targeted at the telecommunications industry.

Sun said the SPARC, was chosen to its lineup when it purchased U.S. based Integrated Micro Products. The servers start at $100,000 and will ship this month. Meanwhile, Sun's SunExpress unit, which sells add-on devices and peripherals, expanded its license-based service to let registered users buy products online.

Is the **mainframe** back from the **dead**?
Is **client/server** really on the ropes?

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is safe whatever happens?

With information technology, the only thing that's
certain is that everything will change. The next
technology you commit to could lead your
company into the future. Or it could wind up as
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to work with different architectures, different
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the details? Just call **1 800 922-3260, ext. 1401.**
Or visit us on the Web. Either way, we're flexible.

New Products

Olympus Image Systems, Inc. has unveiled SYS.230 SCSI Personal Storage System.

According to the Melville, N.Y., company the product is a lightweight optical storage device that reliably stores hundreds of images on 230M-byte cartridges. It was de-

signed for print graphics and digital camera image storage for backing up and archiving files and databases and storing music.

Each cartridge costs $10. The cartridges resist shock, magnetic fields and dust and are rated for 30 years of archival-quality storage. The device works in either vertical or horizontal orientation. It requires Apple Computer, Inc.'s Mac OS 6.0.7 or higher, a Macintosh Classic or greater, Windows 3.x, Windows 95, Windows NT or DOS 5.0. PC

users also need a SCSI adapter.

Pricing for SYS.230 SCSI Personal Storage System starts at $299 for an internal version.

▶ *Olympus Image Systems*
(516) 844-5000
www.olympusamerica.com

Hewlett-Packard Co. has introduced HP E2920 PCI, a series of computer verification tools for designers who develop,

debug and validate products.

According to the Palo Alto, Calif., company, the tools include a Peripheral Component Interconnect (PCI) exerciser and analyzer with a fully in-system-programmable PCI master and target device, a PCI analyzer user interface for Windows 95 and Windows NT operating systems for interactive analysis of PCI bus traffic and a PCI exerciser user interface for Windows 95 and Windows NT for interactive debugging.

Each tool is sold separately. Pricing starts at $2,950.

▶ *Hewlett-Packard*
(415) 857-1501
www.hp.com

Pacom Data, Inc. has introduced two Super VGA monitors, models CL15E and CL17.

According to the Fremont, Calif., company, the monitors offer plug-and-play capabilities, color control features and three-year warranties. They can be used in Macintosh configurations.

The monitors have 1,280 by 1,024 dot/in. resolution and on-screen display digital controls. The CL15E has a 15-in. diagonal flat screen. The CL17 has a 17-in. diagonal flat screen.

The CL15E costs $379. The CL17 costs $679.

▶ *Pacom Data*
(510) 440-7200
www.pacomdata.com

Pacom Data's 17-in. CL17 Super VGA monitor has plug-and-play capabilities

Sharp Electronics Corp. has announced PC-9080, a high-performance, 133-MHz Pentium-based notebook computer.

According to the Mahwah, N.J., company, PC-9080 weighs 7.3 pounds and can display IBM's Extended Graphics Array 1,024 by 768 dot/in. format images on its 12.1-in. screen. It features a 64-bit Peripheral Component Interconnect designed to let users increase system performance and functionality. It also has a six-speed CD-ROM drive, a built-in 28.8 kil/sec. fax/modem, MPEG1 software for video compression, a removable 3.5-in. floppy drive, 2M bytes of video RAM and a touchpad pointing device.

Pricing for PC-9080 starts at $6,000.

▶ *Sharp Electronics*
(201) 529-8731
www.sharp-usa.com

[Un]tangling

The Intricacies

of

Distributed

Computing

In retrospect, the era

of mainframe computing

was relatively simple.

In today's distributed

computing environments,

things are very different.

Integrating and managing the IT infrastructure in the enterprise of today can be an overwhelming job.

In retrospect, the era of mainframe computing was relatively simple. Mainframe environments consisted of only seven major components — the host computer, front-end processors, controllers, terminals, modems, dedicated private lines and application tools. For each of these products, there was only a handful of suppliers to choose from.

Distributed computing presents complex challenges

In today's distributed computing environments, things are very different. These environments are vastly more complex, containing hundreds of devices from superservers to PCs; from portable computers to cellular devices; from hubs and routers to gateways and switches; from printers to storage devices. There are hundreds of PC manufacturers and suppliers of communications devices and thousands of vendors of peripheral devices and software. The result? Piecing together the right combination of computing and communications equipment has become a daunting task for technology decision makers everywhere.

Not surprisingly, companies implementing client/server architectures can end up with one-of-a-kind mixtures of hardware, software, operating systems and communications devices. For instance, a Banyan VINES network might be dedicated to the applications

of one department, while other departments might be running applications on Windows NT and Novell. And while one department runs NT on Compaq servers, another has Sun workstations running UNIX. Vital network management devices often come from different vendors. And who knows what software is on each PC? Simply put, integrating and managing the IT infrastructure in the enterprise of today can be an overwhelming job.

Telecommunications technologies are proliferating

The same is true for many companies' telecom systems, due to the proliferation of new communications technologies. And the situation is getting even more challenging as computing and communications technologies merge. Companies need to be assured that their current and future network and devices can interoperate. They require systems that can connect all the pieces — today's PBX systems, computer telephony applications, Internet and intranet applications, wireless and infrared devices, network services, and voice, data, image and video — into the emerging world of broadband, multimedia communications.

End-user support costs are significant

Another factor to consider is the cost of end-user support. According to a

An organization devotes s
to the management and suppor
it has to divert resource

report from the Gartner Group titled
"Total Cost of Ownership: A Powerful
Management Tool," support labor
represents over 70% of the total cost of
ownership in a client/server environment.
And over time, the labor component
continues to increase, while technology
decreases as a percentage of the total
cost of ownership. With the growing
cost of supporting end users — including
education, systems operations and
maintenance — client/server computing
solutions must include resource and
system strategies designed to minimize
cost creep.

For example, the average user requires
$250 worth of support per month alone
for anything from logging in, changing
passwords or getting system problems
resolved. In fact, the overall cost to
equip and support an end user with a
LAN-connected workstation can range
from $6,000 to $12,000 a year, depending
on how often a support engineer must
be dispatched on-site, according to Ga
Research, Inc., a market research and
management consulting firm in
Mountain View, California.

Global issues are
driving technology

In addition, the internal technology
issues facing today's organizations are
exacerbated by issues of a more global
nature, including:

* blurring of national and international
business boundaries

* emphasis on speed to market

* growing role of technology as a
competitive asset

* advent of supply chain integration,
inter- and intracompany data sharing
and communications

* growing reliance on technology for
mission-critical business applications

* growing need for business to
integrate telecommunications and
LAN/WAN capabilities

What often happens is that an organi-
zation devotes so much time, money
and attention to the management and
support of its IT infrastructure that it
has to divert resources away from its
core competency. And if that organi-
zation decides to seek outside help,
the services of several companies are
usually required, resulting in multi-
vendor compatibility problems and a
more precarious planning process.

Effective outsourcing
requires infrastruc-
ture and technological
expertise

If third-party outsourcing companies
are to provide corporate customers
with a strategic edge in today's era of
technology convergence, they need
more than just voice or data or
networking capabilities. They need to
have a sound network infrastructure

> **o much time, money and attention t of its IT infrastructure that s away from its core competency.**

coupled with proven expertise in implementing and managing distributed computing environments.

Until recently, few outsourcing companies offered such a comprehensive solution. And those that did charged high prices. Maybe a Fortune 500 corporation could afford a comprehensive management service for its distributed

Corporations are starting to realize how costly and time consuming it is to implement and maintain custom solutions. However, a supplier who offers pre-packaged solutions — comprised of state-of-the-art hardware and software from a select group of "best-of-breed" vendors — can significantly reduce both deployment time as well as requirements for ongoing sup-

"Even the biggest companies are seeing a real competitive advantage in time-to-market, so they are opting for more quickly implemented and low-maintenance, standardized solutions."

computing resources, but most of the 60,000 mid-sized companies in the United States could not. Instead, IS managers of those mid-sized organizations toiled to create a strategic infrastructure with limited financial and personnel resources, while demands for their time constantly increased.

Standardized solutions offer significant advantages

Today's small and mid-sized companies need cost-effective and affordable solutions that can be tailored to their particular business requirements and then implemented quickly, easily and efficiently.

port. With open systems standards-based solutions, small to mid-sized customers can gain access to the leading-edge technology used by large corporations without making costly investments in rapidly changing technology.

"Even the biggest companies are seeing a real competitive advantage in time-to-market, so they are opting for more quickly implemented and low-maintenance, standardized solutions," says Greg Jacobsen, Executive Vice President of Business Strategy and Marketing with SHL, a leader in large-scale systems integration and client/server migration based in Ottawa, Canada. "From Fortune 100 to Fortune 1000 companies, the game now is speed."

Hiring outsid communication for companie tomorrow.

The standardized solutions required by this new competitive environment mark the beginning of a big change for the third-party outsourcing business—which in turn means more value for customers of this service.

With a standardized solution, the problem-solving process is streamlined as well. Problems that arise are rarely unique and can be resolved quickly — often by telephone. Faster problem resolution will eliminate the frustration users feel toward a changing technical environment, making them more productive in their core business functions.

Providing a total solution

Until recently, a mid-sized business looking for a computing and communications solution that could be tailored to its unique client/server environment had to go to one company for network transport needs and another for network management. "Most companies were unable to reap the full benefits of systems integration because there was no single vendor who could effectively combine the power of communications and information technologies," says Brian A. Brewer, Senior Vice President, Business Marketing for MCI Communications Corp.

e experts to handle increasingly complex
s and computer solutions will be the rule
s that intend to compete in the arena of

But that situation changed in November 1995, when MCI acquired SHL. The teaming of the two companies allowed them to create a solution that combines MCI's expertise in switched data and Internet services with SHL's leadership in implementing and managing client/server environments for Fortune 500 businesses.

MCI's solution for managing enterprise networks

Beginning in June 1996, this new service will be offered initially to companies with 50 to 500 desktops and up to 10 servers. The turnkey service includes, as standard offerings, proven open-

"Customers today are looking for integrated computing solutions combining networking and telecommunications technologies. Bay Networks has forged sophisticated business and technology partnerships with leaders like SHL and MCI to provide customers with the best turnkey solutions in the marketplace." Jeff McCarthy, Bay Networks' Vice President of Carrier & Integrator Operations.

"We've done much more than just merge the technological elements of computing and communications," says Brewer of MCI. "We've created comprehensive outsourcing solutions designed to solve the special challenges faced by mid-sized businesses across all industries. Specifically, we've standardized what was previously customized — and therefore affordable only to the largest companies — which enables us to bring our solutions within reach of the middle market. And even though our solutions are standardized, they can still be tailored to the specific needs of each customer."

system components such as Compaq ProLiant servers running either Microsoft Windows NT Server 3.51 or Novell NetWare 4.1, hubs from Bay Networks, and routers from Cisco Systems. Standard software applications include Microsoft Office for LANs with management tools provided by Intel.

MCI expects that customers for its new turnkey enterprise management support services will be mainly mid-sized companies, but notes that large departments of multinational corporations might also be potential customers.

" Even though our solutions are standardized, they can still be tailored to the specific needs of each customer. "

Infrastructure transition and stabilization

The offering is geared to organizations wishing to acquire, or transition to, a Microsoft NT or Novell NetWare network environment. For those who have existing Microsoft NT or Novell NetWare architectures, this service will eliminate the need to manage the intricate day-to-day operations of running these networks. For those organizations transitioning from another client/server architecture, arrangements can be made to replace the existing equipment with new upgraded hardware and software.

The transition will include a comprehensive audit and assessment of a company's existing infrastructure as the basis for development of an implementation plan. In this way MCI can provide its customers a significantly enhanced operating environment. Organizations and institutions wishing to embark on a new client/server architecture can lease the basic infrastructure, including servers and software, from MCI. Down the road PCs may be also included in the lease, if so desired.

Whether a company is starting out on the road to client/server or they are well on their way, the experience MCI has gained from its growing customer base will benefit each company through lower annual per-user costs of equipping, operating, maintaining and servicing their installed hardware and software base.

Proactive systems monitoring and management

Historically, management and support in a client/server environment were often overlooked, due primarily to a failure to foresee the complex interoperability problems posed to users by this powerful new architecture. Thus, the notion of management and support developed in an ad hoc manner, fragmenting along departmental and operational lines. This fragmented management and control forced users to develop their own informal networks of support, creating invisible costs and inefficiencies in their organizations. Problem resolution was clearly reactive.

MCI's new offering will radically change this situation by providing the foundation for continuous management and control of the desktop, server and network environment with its "over-the-shoulder" support service. This is made possible by the open standard selected for the new service, and by development of sophisticated management and support centers capable of resolving all problems presented by the desktop, server or network. This highly integrated technical support base will enable MCI to proactively search for and rectify problems before they become apparent to the user community.

This proactive approach will lead to a considerable improvement in network efficiency and, thus, user satisfaction. Costs are reduced by eliminating the need for peer support and by centralizing the fragmented support and control facilities. MCI estimates the use of its enterprise network management offering will result in more than 99% uptime for all users. "Today's desktop business applications are absolutely critical to a company's success," says SHL's President, Technology, Bill Trafford. "That's why our goal is to provide a service that offers the highest possible degree of reliability."

End-user support and problem resolution

MCI's offering has been specifically designed to provide the customer user community the best support in the industry. The centralized support facilities will allow for deployment of superior tools and a concentration of resources not available to the vast majority of organizations. When problems do arise, a qualified technical representative can lead the user to a solution remotely, by sharing that user's screen. If the problem cannot be solved interactively over the network, MCI will dispatch a field service engineer from the most appropriate help desk center in North America to deal with it.

Resolution is expedited through MCI's vast knowledge base and expert systems.

The outsourcing advantage

Outsourcing has emerged as a strategy used by many businesses to create a competitive advantage. Today, it is commonly thought of as a means of redirecting rather than replacing resources.

Many companies employ outsourcing to allocate resources more efficiently, allowing their employees to do the jobs they were hired to perform. Organizations also use outsourcing to segment functions and tasks that can be handled more efficiently by a third-party expert who has achieved economies of scale through lower cost structures and greater purchasing power.

Companies outsource to solve tactical, near-term issues and to achieve strategic, long-term benefits. According to The Outsourcing Institute, these are the top reasons companies outsource:

- They do not have access to the required resources internally. If an organization is expanding its operations, especially into a new geography, outsourcing is an alternative to building the needed capability from the ground up.

- They want to reduce and control operating costs. By accessing an outside provider's lower cost structure, which results from greater economies of scale or another advantage based on specialization, they realize greater savings.

- To contract for resources on an as-used basis rather than through capital expenditures. Outsourcing also permits an organization to redirect its resources from non-core activities to those that better serve the customer.

- Markets, competition, government regulations, financial conditions and technologies all change quickly. When companies outsource they gain the flexibility to meet changing opportunities.

- To immediately realize the benefits of business process reengineering by having an outside organization — one already reengineered to world-class standards — take over the process.

- By working with an outsourcing firm, a company can gain access to new technology, tools and techniques without incurring the costs of chasing technology and the training costs associated with each new generation.

- By having an outside expert assume operational details, outsourcing lets a company focus on broader business issues, such as customer issues. For many companies, the most compelling reason for outsourcing is that "how to" types of issues are siphoning off huge amounts of management's time and attention.

The need for pre-packaged deployment and management services will soar.

with an inference engine capable of fully exploiting the information critical to solving user problems. To stay on the leading edge, this vast knowledge base is constantly kept up-to-date. The "over-the-shoulder" tool, with the user's permission, provides the ideal platform for diagnosing and resolving problems right on the user's PC. MCI also uses a sophisticated database to manage each problem ticket, guaranteeing that all problems are tracked and dealt with in a timely manner.

"End users like the concept that if anything breaks, they need to call only one number and we'll get on track to fix it immediately," says Trafford.

Benefits to mid-sized companies

Market research firms expect the need for pre-packaged deployment and management services to soar. As the number of desktop computers continues to rise, so will the number of LANs. However, LAN interconnection via a WAN is too complicated for many mid-sized companies to manage on their own. But with an enterprise network management service such as the one offered by MCI, these companies will no longer have to worry about the complexities of distributed computing. Instead, they can rely on MCI to provide the following:

* Network management, so companies can concentrate on their core competencies

* Hardware and software management to ensure compatibility and interoperability and to minimize obsolescence

* Comprehensive support designed to eliminate the hidden costs of peer support downtime, slow help desks, etc.

* Proactive network monitoring, designed to solve end-user problems remotely, before they happen or affect productivity

* "Best of breed" vendors to ensure maximum performance and reliability

The results of outsourcing

- Increased productivity through improved end-user performance and satisfaction

- The ability to share information across the enterprise more quickly and easily

- Improved service to clients

Hiring outside experts to handle increasingly complex communications and computer solutions will be the rule for companies that intend to compete in the arena of tomorrow. It will allow them to achieve bottom line benefits such as performance enhancement while allowing them to concentrate on their core competencies.

The secret's out:
Object request brokers
infiltrate development tools,
environments. 54

Software

Mac Office update a year off

Users to get tighter links with Windows world

By Lisa Picarille

When Microsoft Corp. updates the Macintosh version of its Office software suite next year, users will have much tighter integration with the Windows world, Microsoft officials recently acknowledged.

During a private briefing earlier this month at Macworld in Boston, Microsoft officials were tight-lipped about everything else coming in the major update of the best-selling suite of Macintosh applications.

Office already has all the Macintosh suites markets, according to Dataquest, a market research firm in San Jose, Calif.

Macintosh users are waiting until next summer for Office 97. The Windows version will be available by year's end. But the two versions will share 90% core code, and that is important to users with mixed environments.

"Improved file compatibility is key for us because we have Office on the Mac

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Application suites

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and Windows," said John Tsombakos, a programmer/analyst at AMI Leasing Group, Inc., a car and truck company in Worcester, Mass. "We want to be able to share files seamlessly."

Microsoft officials announced the enhanced file compatibility with the Windows version but declined to flesh out the details of what Macintosh users can expect from Office 97.

On the Windows side, some of the scheduled improvements include a souped-up version of Microsoft's Schedule+ personal information manager; the inclusion of its Internet Explorer browser, an automated form of online help called Office Assistant, a drawing program called WordArt and a streamlined command interface across all Office applications.

But Microsoft officials said the forthcoming Macintosh update of Office will be "Copland-friendly," which means it will work with the improvements that Apple Computer, Inc. plans to add to its Macintosh operating system. But Office 97 won't require a new version of the Mac OS to run, according to Dave Mehring, group product manager for Micro-

soft's Macintosh applications.

Apple recently announced a strategy shift for its operating systems; the company will release Mac OS improvements every six months rather than issue a "mega-release," formerly called Copland. Because of that shift, Office 97 for the Macintosh won't fully take advantage of Copland features until further down the road.

Sketchy future

But it is unclear whether Office 97 for the Macintosh will take advantage of the improvements Apple plans to add to its Macintosh operating system. In a January. The improvements will include several key Apple technologies such as QuickTime 2.5, Open Transport, Open-Doc and Cyberdog.

Because many of those compete with similar Microsoft products, it is unclear what level of support Microsoft plans to offer for those products in Office 97 for the Macintosh.

Whichever road Microsoft takes, it probably won't matter much in the long run, one industry watcher claimed.

"When the largest Mac software developer ignores Apple technologies and still has a virtual monopoly in the suites market, "you have to question just how

important those technologies are," said Jeff Tarter, editor of "Softletter," an industry newsletter based in Watertown, Mass. "With little competition, Microsoft has no urgency to upgrade users or adopt Apple core technologies."

SCO, HP release 64-bit Unix interface

Users may receive server flexibility

By Laura DiDio

SCO, Inc. and Hewlett-Packard Co. recently began to ship the initial API specification for their jointly developed 64-bit Unix operating system.

The availability of a common application programming interface (API) based on Intel Corp.'s forthcoming Merced chip set handily will give businesses the flexibility to run Unix and Windows applications on any HP, SCO OpenServer and SCO UnixWare server, according to Victor Kasacavage, director of strategic planning at SCO.

SCO and HP are working with major systems vendors to ensure full compatibility between those

vendors' Unix server platforms and the forthcoming SCO/ HP 64-bit 3DA Unix operating system. Those vendors include Compaq Computer Corp., Data General Corp., ICL, Olivetti USA, Siemens/Nixdorf Informationssysteme AG and Unisys Corp.

The competition

But that isn't quite an industry-wide initiative. There are still other versions of Unix — most notably Sun Microsystems, Inc.'s Solaris, IBM's AIX and Digital Equipment Corp.'s Digital Unix — that will compete with the HP/SCO initiative.

Jean S. Bozman, a Unix server analyst at International Data Corp. in Mountain View, Calif., said the API could ultimately make Unix a stronger platform for corporate America. But she also offered a cautionary note. "The

plan "is a very complex undertaking," she said.

"And yet'll also have to watch for differences in application de-

velopment techniques and whether older applications will have to be modified as users migrate," Bozman added.

What's ahead

The first version of the API will define how the SCO/HP operating system will work with the Open Group's Distributed Computing Environment, X.11, the Open Group's Motif, and network, graphics, management and Internet services.

Future versions of the SCO/HP 64/32-bit Unix API specification will address more advanced features such as clustering and security, Kruisi said.

The API will be available around the middle of next year, Kruisi said.

That suits users such as Dwight Wode, manager of Unix systems at CNA Insurance Co.'s

Personal Lines Division in Chicago. CNA has a heterogeneous environment that includes several flavors of Unix, Microsoft Corp.'s Windows NT Server and Novell, Inc.'s NetWare.

Wode said he would like to be able to run the same applications across all his server hardware.

SCO and HP managers said their companies are working closely with Intel to ensure that their 3DA 64/32-bit Unix systems will ship soon after Intel's Merced chip set becomes available in volume.

All told, the API "will ultimately help Unix assume its rightful role in the industry as the [operating system] that's better suited than Windows NT to run mission-critical" applications, said "David Courtney, editor of "courseguon," an industry newsletter in San Mateo, Calif.

Briefs

Trading bug bytes

Merline Associates, Inc. in Santa Clara, Calif., has licensed antivirus packages to Microsoft Corp. Under terms of the pact, Solidtree's product manager or Microsoft. The inclusion of an antiviral package in Microsoft's Internet software is important, Yet said, because more viruses — the most common bug — also hide in Internet electronic-mail attachments.

GammaLink kit ships

GammaLink, a division of Dialogic Corp. in Sunnyvale, Calif., recently began to ship its Developer's Kit for Windows NT. So far some network fax developers have adopted the software. It lets third-party vendors build GammaLink's fax board capabilities into fax applications based on Microsoft's Windows NT. The GammaLink fax boards are available from one to 12 ports on digital, T1 and Direct Inward Dialing interfaces.

GammaLink's Developer's Kit for Windows NT is shipping. It costs $995.

X consortium sheds duties

The X Consortium will hand over development responsibility for the X Window System technology to The Open Group, the Cambridge, Mass., organization formed earlier this year by the merger of the Open Software Foundation and X/Open Co. The X Consortium will cease engineering activities after it fulfills its role as prime contractor on a new version of The Open Group's Common Desktop Environment that integrates the Motif 2.0 user interface with X11 technology. That project is scheduled to be finished by year's end.

OpenStep for Solaris in beta

Sun Microsystems, Inc. began propriated Solaris implementations of Next Software, Inc.'s object-based OpenStep technology were released for beta testing. Full shipments of the Solaris OpenStep operating system and Workshop OpenStep development environment are due late this quarter, Sun officials said. The OpenStep software will be packaged separately from Sun's Solaris NEO object tools, but the product sets are compatible.

Mapping package update en route

Has enhanced connectivity and programming tools

By April Jacobs

MapInfo Corp.'s latest version of its desktop mapping package includes enhanced connectivity and programming tools.

MapInfo in Troy, N.Y., will offer MapInfo Professional 4.1 on Microsoft Corp.'s Windows 95, Windows NT and Windows 3.1.x in September. It will cost $1,295 and support Oracle Corp., Sybase, Inc. and Microsoft databases.

One early MapInfo Professional 4.1 user is Berlow Real Estate, Inc. in Buffalo, N.Y., which deals with national retailers that need information about property locations.

Berlow uses the product to give clients an overview of areas that may be good for them to look into for expansion and see what the competition is doing, according to Jim Keller, MIS director at Berlow. "It's always very impressive to clients that we can ... show their competition on a map," Keller said.

Rock-solid

Berlow has used MapInfo products for several years and says more specialized third-party applications and additional connectivity tools make the latest version of Professional "a solid product."

MapInfo Professional lets users integrate data into spreadsheets and presentations. For example, users can export mapping im-

MapInfo Professional 4.1 lets users integrate data into spreadsheets and presentations

ages from Professional 4.1 to Photoshop 3.0.

Users also can capture data stored in Access and store and retrieve spatial data from databases such as Sybase and Oracle.

Bruce Jenkins, a vice president at Daratech, Inc., a research firm in Cambridge, Mass., says the popularity of desktop mapping software is growing among business users as they learn to use it for analysis.

Jenkins said MapInfo's strength has been in the desktop arena; the company claimed 59.9% of the PC-based geographic information systems market last year. Competitors such as ESRI, Inc. in Redlands, Calif., have a stronger presence in the Unix workstation-based market, he added.

New Products

Global Village Communication, Inc. has introduced FaxWorks Server 2.0, network fax communication software for Microsoft Corp.'s Windows NT.

According to the Sunnyvale, Calif., company, FaxWorks Server 2.0 is a scalable fax communications product for small-to-midsize businesses and departments in large corporations. It lets users send faxes from any application, generate custom cover pages, merge faxes with letterhead and share telephone books — all through one interface.

Features include network administration, automatic administration, automatic fax-based detection, list board support and extensive routing capabilities.

Pricing starts at $2,495 for a 30-user license.

► *Global Village Communication*
(408) 523-1000
www.globalvillage.com

Smart Systems, Inc. has introduced SafeBoot 95.

According to the Munster, Ind., company, SafeBoot 95 lets Windows 95 users reinstall DOS and Windows 3.1 without disturb-

ing the Windows 95 system. Users can choose to run Windows 3.1 or Windows 95 each time they reboot their PC.

SafeBoot 95 was designed to automatically recognize and install itself on most Windows configurations. It also lets users manually specify the location of DOS and Windows directories.

SafeBoot 95 requires 50M to 100M bytes of disk space for a full installation. It costs $40.

► *Smart Systems*
(219) 838-3000
www.smartsystems.com

F.I.T., Inc. has introduced CADvance 7.0 for Windows, two- and three-dimensional computer-aided design (CAD) software.

According to the Anaheim, Calif., company, CADvance 7.0 includes features for associative dimensioning and texturing, computation and display of object sizes, 256 colors, more than 32,000 kinds of objects, 16 line styles, drawing preview and symbol management.

It also features eight view-only reference files and an array of information management features.

Pricing for CADvance 7.0 for Windows starts at $1,995.

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Vendors pull the cloak off object request brokers

By Frank Hayes

It wasn't long ago that object request brokers were every bit as obscure as their name.

An object request broker (ORB) is middleware that serves as a traffic cop for object-oriented distributed software on a network.

The ORB routes messages among objects, so developers don't have to worry about where on the network each piece of software resides. But only large organizations that have distributed applications have needed ORBs — or even know what they are.

Object tools

"Object technology is a big corporate secret today," said Zev B. Lavon, a consultant at RBS Consulting in Baltimore. "People have to build it themselves now."

That is partly because using ORBs to connect applications across a network has been technically difficult.

Progress on standards has been slow.

The Object Management Group, a vendor and user consortium in Framingham, Mass., is developing a set of standards called the Common Object Request Broker Architecture (CORBA). But it has had a tough time persuading members such as IBM, Digital Equipment Corp. and Sun Microsystems, Inc. to work together to adopt the standards. Without these standards, development tool vendors have been slow to support ORBs.

Vendor pains

But now tool, Internet and object technology vendors are actively looking for ways to make ORBs easier for corporate developers to use. IBM and Sun last week said they will work together to ensure that their tools and ORBs will work together.

The agreement follows a similar deal in May among IBM, Apple Computer, Inc. and Iona Technologies Ltd. in Dublin.

Some development tool vendors, including Powersoft Corp., are also working to link desktop applications to CORBA servers. Powersoft is working with Iona on ways to let applications built with the PowerBuilder visual development system easily include an ORB.

And Open Environment Corp. in Boston, which will soon merge with Borland International, Inc., plans to add an ORB to its middleware by year's end.

Netscape Communications Corp. last month announced it will add an ORB to the next versions of its Navigator World Wide Web browser and SuiteSpot Web server. That will put ORBs on millions of users' desktops by this time next year.

More apps

But some corporate developers want even more applications to come with CORBA-compatible interfaces — especially large-scale applications.

"That's exactly the message we want to be sending to vendors, that we won't accept proprietary interfaces into their products," said Carol Burt, technical director at BellSouth Corp. in Birmingham, Ala. "We want these to be open systems."

Assuming the Lotus position

Third-party vendors develop support for Domino

By Tim Ouellette

Third-party software vendors are starting to deliver development and other kinds of tools for Lotus Development Corp.'s integrated Notes/Web server, called Domino.

Domino is a Notes server module that natively supports the Internet's Hypertext Transport Protocol and Hypertext Markup Language protocols. As a result, Notes servers can act as World Wide Web servers, and users have the option of accessing Notes data from a Web browser.

Infolmage, Inc., a Notes developer and integrator in Phoenix, is shipping Instant I-Net, a suite of application templates (see chart) that the vendor claims lets users get Domino-based intranet applications up and running faster than if they developed their own programs.

Central help desk

Meanwhile, Brainstorm Technology, Inc. in Cambridge, Mass., plans to announce Virtual Help Desk for Notes. This is help desk software that lets users log service requests to information systems managers via a Web browser, using Domino in the management engine.

The applications are important because there won't be company-specific business gains with Internet use unless users combine the Web with applications such as Notes, analysts said.

"It is one thing to drop a browser on everyone's desktop and set up a home page and think you have instant productivity," said Gerry Murray, an analyst at International Data Corp. (IDC) in Framingham, Mass. "You really need the discipline of something like Notes [and Domino] with forms, data, etc. — to make the Internet relevant for business productivity."

Users can expect a lot more where this came from.

An IDC survey completed earlier this month found that 95% of Lotus 12,000 business partners expect to provide some sort of service related to Domino. These include integrating Web pages with Notes databases, using Notes as a Web publishing tool, creating Internet/intranet bridges and extending legacy applications to the Web.

One user on the Instant I-Net discussion group at www.infolmage.com saw the possibilities that Web and Notes integration could bring. "I have been recently pushing Domino as our intranet solution" to little avail, he said. "After management saw what was possible with Domino and Instant I-Net, they all of a sudden started to really pay attention to me."

InfoImage plans to deliver other plug-in intranet applications later this year.

Virtual Help Desk lets geographically distributed companies have one central help desk. IS staff can then make the company's IS knowledge base — stored as a Notes database — available to users via the Web. Instant I-Net costs $995 per Notes server. Virtual Help Desk costs $7,200 per server for an unlimited number of users.

Just add water

Company phone directory	Human resources library (job postings, benefits information and policy manuals)
Document repository	
Reference knowledge base	
Discussion forum	

ActiveX components ease Notes customization

By Sharon Gaudin

Users have six new ways to customize Notes thanks to a set of ActiveX software applets Lotus Development Corp. recently announced.

One user said this is a hot release. But an analyst said Notes-specific components can be a major drawback.

Cambridge, Mass.-based Lotus started shipping a set of ActiveX-based software applets two weeks ago. The Lotus Components Starter Pack includes six core components. A component is a reusable software "chunk" that can be loaded into an end user's Notes setup and serve as a mini-application.

The Notes menu will contain six components — chart, comment, draw/diagram, file viewer, project scheduler and spreadsheet — and a template builder.

Lotus Components Starter Pack, a collection of six core components, may make Notes more robust

Product boost

"The components are the type of thing that makes Notes a robust application," said James Wilcoxon, CEO of Rockville, Mass.-based Wilcoxon Construction Co., which installs commercial swimming pools. "You have a menu sitting up there, and if you want to compose a chart or something, you don't have to leave Notes."

But David Yockelson, an analyst at Meta Group, Inc., said although the components will save Notes users time, they can't be used outside of Notes — at least not yet. If an end user wants to use the new components, he must run Notes.

"It's a good start," Yockelson said. But "it's limiting, at least at first, because you're locked in to Notes. Notes users won't be put off, obviously," he said.

The components are for only 32-bit platforms that run on Windows 95 and Windows NT. Peter Cohen, component product manager at Lotus, said the company is focusing on moving the components to other platforms, specifically the major Internet browsers, within a year. Lotus also is working on a few more components, including one for data querying, Cohen said.

Sandy Taylor, an analyst at The Standish Group International, Inc. in Dennis, Mass., said making the components available to Notes users will empower computer-savvy workers. "A lot of folks are computer literate, [and the components] give them a leg up" because they are able to customize and thus more effectively use Notes applications, she said. Lotus components may make life easier for IS managers who have to do the purchasing and integration. "If I have a choice of taking a product from Company A and a product from Company B, as opposed to buying two from one company, then one that's going to pick," Taylor said. "If they're already using Notes, it's an easy choice."

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The Enterprise Network

Mobile agreement

Wireless carriers' billing accords further CDPD

By Mindy Blodgett

Another piece in the CDPD puzzle fell into place in recent months as most of the major carriers signed interoperability agreements. Those agreements allow users to roam among coverage areas easily.

Analysts and industry observers said the agreements are an important step in moving along the implementation of Cellular Digital Packet Data (CDPD), which supports short, bursty transmissions via the Internet Protocol-based wireless packet technology.

The interoperability agreements will make CDPD more attractive to users who seek to use wireless data communications between cities or regions. Customers can now use wireless data devices to send electronic mail or short messages between areas with CDPD coverage without worrying about billing or needing different systems.

"The big news lately with CDPD is definitely the interoperability agreements," said Roberta Wiggins, an analyst at The Yankee Group in Boston. "The major carriers are pretty much hooked up, which does bring us closer to some kind of nationwide communications capability."

Wireless carrier, page 58

CDPD agree

• = Agreements made among major CDPD
carriers for installing and interoperability

Areas of coverage		
Ameritech		
• Chicago		
• Columbus, Akron, Akron, Ohio		
• Gary/Hammond, Ind.		
• East Chicago, Ind.		
• St. Louis		
AT&T Wireless		
GTE Mobilnet		
• San Jose, Calif.		
• San Francisco		
• Tampa, Fla.		
• Dallas		
• Honolulu		
Bell Atlantic Nynex Mobile		

MCI links data/voice network to Mexico after monopoly ends

By Kim Girard

U.S.-based multinational companies that do business in Mexico now have access to a unified data and voice network that links the two countries.

Avantel, a joint venture between MCI Communications Corp. and Mexico's largest bank, Grupo Financiero Banamex Accival, this month unveiled a 3,400-mile fiber-optic network that links MCI users in the U.S. to a newly identical network in Mexico.

MCI is the first long-distance carrier to offer switched long-distance service in Mexico, which just passed a law that allows competition with the 47-year-old long-distance monopoly, Telefonos de Mexico (Telmex). Before the breakup of the monopoly, providers were forced to offer services over dedicated circuits leased from Telmex.

Avantel offers customers services that include private lines, X.25 packet networks, frame relay, dedicated access to the Internet and public fax service.

See Taylor, manager of telecommunications and office automation at Rosmof Corp., a mobile computer maker in Cedar Rapids, Iowa, said the company is considering using Avantel to link a sales site in Mexico City to headquarters via a frame-relay link. Employees at the site currently dial in orders to Iowa.

Frame relay should be less expensive

MCI, page 58

No standards, no products, but lots of hype

Gigabit-gaga

By Bob Wallace

Even though vendors have been racing to develop products for the latest high-speed LAN switching option, Gigabit Ethernet, users are wary of the nascent technology.

The din of the Gigabit Ethernet marketing drums has tended to drown out the fact that there are no standards, products aren't due until at least year's end and Asynchronous Transfer Mode (ATM) offers more capabilities.

Users said Gigabit Ethernet, which operates at 1G bit/sec., promises a means to handle increasingly heavy traffic loads in backbone networks. But they don't see it as the big rival to ATM that it has been made out to be.

"Gigabit Ethernet is certainly something most everyone will eventually be able to grow into, but ATM is much more versatile. And although it may end up costing more, it has capabilities that Gigabit Ethernet lacks," said John Boyd, chief network working technologist at Northwest Utilities, Inc. The Berlin, Conn., power company uses an ATM network that can handle voice, data and video traffic.

Gigabit Ethernet lacks quality of service functionality, which lets users set different priorities for sending voice, data and video and which guarantees bandwidth for those transmissions. Ethernet technology was designed for data and can't guarantee performance for data and video when they run simultaneously at high speed.

But to Gigabit Ethernet's credit, users see it as promising. That's because it gives users a migration path from shared Ethernet to switched Ethernet to Fast Ethernet to gigabit speed. And that's good news for Ethernet users who want to support more bandwidth-intensive data applications without painful upgrades.

Users will get their first good look at Gigabit Ethernet products at Networld/Interop '96 next month in Atlanta.

Users can expect to see Gigabit Ethernet adapter cards, which they can use to connect to servers, and Gigabit Ethernet modules that will enable high-end data center switches to push lower-speed traffic on to Gigabit Ethernet backbone networks.

Gigabit Ethernet pricing is still up in the air, as is a standard for the technology — on which the Gigabit Ethernet Alliance, a vendor association, is hard at work.

Some users are cautiously optimistic about the fledgling technology, but they do have several concerns.

"Gigabit Ethernet is a great idea, but my fear is that expectations will be unreasonably high," said a network manager at an East Coast university. "Just because products will ship doesn't mean that everything will be

in place to handle the bandwidth," she said, referring to cabling, drivers for major operating systems and any changes that must be made to Ethernet.

Another user concern is how firms will tie together Gigabit Ethernet campus networks over the wide area. "Right now, all the carriers are focused on ATM [wide-area network] services but don't have an interface for Gigabit Ethernet," Boyd said.

Nonetheless, research firm Dataquest in San Jose, Calif., is bullish on the technology. Dataquest recently predicted that worldwide sales of Gigabit Ethernet products will reach $2.9 billion by 2000.

John Boyd of Northeast Utilities: Gigabit Ethernet may be less expensive than ATM, but it isn't as versatile

Network tool vendors team up for integration

By Patrick Dryden

Administrators of complex networks are tired of trying to make all their favorite management tools work together. They prefer to see key vendors handle the integration for them.

That wish is coming true for organizations adopting the Tivoli Management Environment (TME 10), a leading systems management suite and framework for taming huge networks.

Key tool vendors met recently in an effort to make their software work with TME 10 as part of a unique vendor partner program launched by Tivoli Systems, Inc., which TME acquired to focus and hand in management software efforts.

The venture differs from similar efforts by competitors and the previous Tivoli OEM because it takes a standards-body approach that promises a more open process than typical vendor-led integration programs.

Through nine working groups, the members of the 10/Plus Association are defining the interfaces that enable complementary and even competitive management products

to communicate.

That means a TME 10 user could choose event-handling software, for example, from members such as Boole & Babbage, Inc., Maxm Systems Corp. or Tivoli and be sure the tool could pass network alerts to the trouble-ticketing module from Tivoli or another vendor.

"Typically, one vendor pushes its own integration standard, or consortiums try and fail miserably. This is a gentleman's agreement among a core group of competitors to create workable interfaces," said Clare Price, research director at Gartner Group, Inc. in Stamford, Conn.

No longer can any single platform overcome the complexity of managing distributed environments, Price said. Instead, users should determine their management requirements, choose matching tools and integrate them.

An aid to users

Tivoli's approach would help Wells Fargo & Co. in San Francisco, whose staff selects "best-of-breed tools" to manage systems and networks but struggles to make them work together, said Peter Martin, vice president of enterprise automation.

"Right now, we have to determine if we can link a platform like Tivoli's with other products and build the bridges ourselves. We prefer to see individual products architected openly to work together easily so we can automate management functions through fewer consoles," Martin said.

TME 10 user Charles Schwab & Co. in San Francisco hopes to see more vendors supply out-of-the-box support of basic communication among their tools, said Dave Kessell, vice president of infrastructure projects.

"No single vendor can do it all," said.

For NationsBank Corp. in Charlotte, N.C., a key attraction of TME 10 in its support of tools from leading vendors, said James Brown, senior vice president of network platforms.

"We hope to just plug tools into one framework as we can paint the overall picture of the network and systems to be managed," Brown said.

Tivoli's independence has improved IBM's ability to recruit partners, said Jack Brown, senior director of distributed systems at association member Boole & Babbage in San Jose, Calif.

Streamlining the process

Tivoli is copying the approach of standards bodies to help management tool vendors adapt their products to its systems management framework. Here's how it works:

1. Tivoli and vendors of complementary or competing products form working groups, such as one for network tools.

2. Members, including 3Com Corp., Bay Networks, Inc., Cisco Systems, Inc., Novell, Inc., SunSoft, Inc. and Tivoli, met in June and again this month.

3. They are defining a basic application programming interface for passing network alerts and data through TME 10.

4. Tivoli tests and certifies products for interoperability.

Tivoli's approach will result in quick benefits to users, said Sue Aldrich, senior consultant at Patricia Seybold Group in Boston.

"Here the participants can define a management specification that's reasonably practical for each of them to implement quickly," she said.

"Users will continue to need multiple tools, but TME-certified applications will at least exchange information," said Tim Wilson, management analyst at Decisys, Inc. in Sterling, Va.

"Then maybe they won't have to boot 11 different consoles to find the answer to one question," Wilson said.

The TME team

10/Plus Association members include BMC Software, Inc., Candle Corp., Compaq Computer Corp., Legato Systems, Inc., Platinum Technology, Inc. and Sun Microsystems, Inc.

MCI links data/voice to Mexico

and is more reliable, Taylor said. "The frame cost is going down," she said. "I personally think it needs to go down more."

Gary Davis, manager of data and wide-area networking at a Houston-based computer firm that has sales and marketing offices in Mexico, said the company also plans to use Avantel's frame-relay service.

"It will lower our costs to do business in Mexico," Davis said. "I do see 5% to 10% savings. I hope to see improved responsiveness, reliability and quality."

Although frame-relay connections are linked across the border, many U.S. companies with manufacturing plants in Mexico don't need them yet, according to one analyst.

Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J., said many corporations consider manufacturing plants the equivalent of their U.S. remote offices and demand little more than Internet access to exchange electronic mail. That may change if business traffic increases dramatically and a uniform data communications system becomes necessary.

"If [the North American Free Trade Agreement] creates a North American manufacturing megaplex, then megaplex will have to have uniform communications," Nolle said. "It's doubtful we'd be able to compete without them. [But] I don't think it's going

to be a factor for another two to three years."

MCI has deeply linked its HyperStream frame-relay service to networks in Canada through agreements with carriers there.

About 200 U.S.-based corporations are potential customers for cross-border network service, said Richard Perez, a senior manager at MCI who works on the Avantel project.

South of the border

Avantel's network extends 3,400 miles and links commercial and residential users in more than 30 cities in Mexico to the network in the U.S.

Users in Mexico now have access to Avantel's:

• Frame-relay network, linked to MCI's HyperStream service
• X.25
• Dedicated Internet service
• MultiLex capabilities

Although MCI is first, it isn't the only company to enter the fray. Alestra, a competing partnership, comprises GTE International Telecommunications, Inc., AT&T Corp. and Alfa, one of Mexico's biggest corporations. But Alestra has yet to launch a network.

Sprint Corp., a Telmex partner, also plans to offer cross-border

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Wireless carriers' agreements

The latest agreement came last month when GTE Mobilenet, Inc. and AT&T Wireless Services agreed to interconnect the billing for their wireless data networks. That will enable customers to send and receive data regardless of their location within each carrier's coverage area. The pact will affect 65 million potential users in 34 markets across the country. It will take effect in October.

Other major carriers, including Ameritech Cellular Services and Bell Atlantic Nynex Mobile, signed interbilling agreements during the course of the past year.

Making it easier for users to roam between service areas by facilitating the billing system is an important step to speeding along implementation of CDPD, which hasn't caught on as expected. The interbilling agreements are key, but they are just one element needed for CDPD to catch fire, according to industry analysts.

"This is an important factor, but there are others, like applications and cost-effective end-node solutions and awareness, needed for acceptance of CDPD," said Dan Merriman, an analyst at Giga Information Group in Cambridge, Mass.

Officials at the carriers said they hope that with interbilling agreements in place, they can begin to attract the other users who have so far stayed away from the technology. Mobile professionals are more interested in nationwide wireless capabilities, according to industry analysts, and the interoperability agreements make nationwide service more of a reality.

In the meantime, users at vertical markets, including public safety agencies and utilities, are increasingly signing on to the technology.

Angel Rivera, a communications engineer at Columbia Gas and Electric in Pittsburgh, said

Mobile communications

the utility uses CDPD technology to monitor energy usage and ensure correct pipeline pressure and flow rates during energy demand peaks. Columbia Gas uses Bell Atlantic Nynex Mobile's CDPD service to transmit information from measuring points throughout its system to its local substation computer in Bethel Park, Pa., and then to its monitoring center in Columbus, Ohio.

"We are getting the same performance we got when we used leased [telephone] lines, and it's more cost-effective," Rivera said of the technology. "And we only needed to make minimal software changes."

In San Francisco, Yellow Cab Cooperative, Inc. uses CDPD from GTE Mobilenet to verify credit-card transactions in cabs. Yellow Cab has been testing the technology in five cabs and will expand the pilot to 25, according to general manager Nate Dwin. "It works pretty well. We've had a few hang-ups but nothing major," he said.

Navigator + NetWare = roll-your-own intranet

By Peter Young
SYDNEY, AUSTRALIA

Enabling Novell, Inc. LAN servers to act as intranet platforms is a painless way to leverage extra business benefits on an existing network, according to officials at Australia's New South Wales State Rail Authority.

But State Rail officials said closer cooperation between Novell and Internet browser company Netscape Communications Corp. would deliver even more benefits.

State Rail gained cost-efficiencies on an intranet environment by mounting Novell's Internet software on NetWare 4.1 servers, said John McNamara, intranet manager at Rails, the authority's information systems group. An eight-month pilot project convinced State Rail that replacing its paper-based publication and manuals with the intranet's faster, more efficient electronic distribution processes delivered significant savings, he said.

Key to the decision was the ability to easily layer Internet technology on top of the authority's NetWare 4.1 servers, which kept new hardware investment to zero.

At the same time, State Rail is challenged at what it sees as slow progress by Novell and Netscape toward implementing Netscape's SuiteSpot range of specialized servers, including catalog and mail servers.

"We don't want to buy NT or Unix servers, but Novell needs to understand Suite-Spot is the sort of software we are after, and we would like to see some results" from the extended licensing talks taking place between Novell and Netscape, McNamara said.

Important for an organization whose 20,000 staffers are spread across 150 NetWare servers, NetWare Web Server integrated well with Novell Directory Services.

Rails is using Novell's LAN WorkGroup Version 5, Web Server, the ManageWise

LAN management product, the GroupWise electronic-mail product and the World Wide Web browser Netscape Navigator.

NetWare Web Server turns NetWare servers into publishing platforms for Hypertext Markup Language (HTML) pages accessed by State Rail staff who log on to the network from 5,000 PCs around New South Wales. McNamara said State Rail was satisfied with NetWare Web Server's ease of use and performance levels.

Goodbye, paper

Initial business justification for the intranet centered on its role as an in-house distribution engine to replace the slow, expensive process of sending out thousands of copies of paper memos, McNamara said.

Future plans call for paper telephone directories to be replaced with a Web server. The intranet will also be used to carry in-house job listings and contact details on State Rail's 20,000 employees, complete with photos and job titles, he said.

Beyond the LAN, State Rail is working to put a Web interface on its corporate data by giving its Unisys Corp. 2200 mainframe the ability to function as an intranet server.

It is testing the Unisys Amicus operating system module, which recasts queries against the Unisys database into HTML-formatted requests.

The intranet pilot project absorbed about two man-months of effort. Easing the chore of creating Web pages were tools such as Info Access' HTML Transit, which automatically converts Microsoft Corp. Word documents into HTML. Another labor-saving tool for State Rail was Map Edit, which embeds Web links in pages that start life as Microsoft PowerPoint slides before being converted to GIF image files.

Young writes for Computerworld Australia.

The Internet

HP focuses
on Internet
security, 65

Providers struggle as 'net traffic grows

By Bob Wallace

Internet service providers that sell unlimited Internet access to consumers at bargain-basement prices are largely to blame for soaring traffic volumes. This overload is making it tougher for business users to get the reliability and performance they need, analysts said.

The problem occurs when businesses buy Internet access from providers that also cater to the $19.95-per-month consumer.

These providers can't afford the network upgrades necessary to give business users higher-bandwidth pipes and quality of service.

"At $19.95 a month for unlimited usage, it's not in the [service provider's] best interest to do anything that would boost usage [such as support of voice, video and multimedia] because it's money they have no way of recovering," said Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J.

The options for users are straightforward: Choose a big Internet provider with deep pockets; opt for a smaller and often cash-strapped provider – most of which are likely to vanish, analysts said;

Internet providers, page 65

Source: Business Research Group, Newton, Mass.

Certification classes are popping up for webmasters

By Kim S. Nash

Although they are still sparse and undefined, a handful of formal certificate programs are popping up for would-be webmasters.

Just like Novell, Inc. NetWare engineers or Oracle Corp. database administrators, information systems workers can earn a webmaster license from these fledgling programs.

Job description

But unlike those more mature licensing programs, webmastery doesn't have accepted minimum technical requirements. Certificates aren't meaningful, some critics say, if there are no widespread definitions for what a webmaster should do.

Some professionals who call themselves webmasters barely know Hypertext Markup Language (HTML); others are Unix wizards who can configure World Wide Web servers in their sleep.

Yet some computer training companies and software vendors have started to offer certificates in various aspects of building and maintaining Web sites.

Although webmasters will never be as quantifiable as, say, training NetWare-4.1, there are some Web-related skills that can be picked up in classes.

A license or some other acknowledgement of competence will help potential webmasters differentiate themselves in a field where almost anyone who can put together two lines of HTML code can call himself a webmaster, said Manish Patel, a marketing manager at Net Guru Technologies, Inc., a network and Unix training company in Oakbrook, Ill.

"Certification is a great idea," said John Robb, an analyst at Forrester Research, Inc. in Cambridge, Mass. "But right now, it's the Wild West."

Formal training programs will catch on, Robb said, partly because of the big investment it is expected to make in external and internal Web applications.

"If you don't see certified developers, then you could have developers with quality or security," he said. "If you run in to those problems, then it's your own fault."

Net Guru launched an Internet server administration class early this year. Students learn how to set up and troubleshoot servers

for domain name and file-transfer protocol services as well as basic Internet security, among other topics. Roughly 30 people have taken Net Guru's Internet Webmaster Engineer course, but not all have earned a certificate. The course costs $2,125.

"We've failed people," Patel said. "If they don't walk out with a core level of understanding, we're not confident they can do the job. We don't want that."

Art is as large a part of being a webmaster as book-learned knowledge, according to those who do it for a living. Therefore, mastery can't be gleaned easily in a classroom.

"I have a dim view of the whole certification idea no matter what it's in," said Tim Evans, an independent Web consultant in Wilmington, Del., and author of *Building an Intranet* (MacMillan Computer Publishing, 1996).

Certification programs "measure not necessarily your skills but your ability to memorize facts and take tests," Evans said.

A better way to screen would-be webmasters, he said, is to develop a hypothetical problem for them to solve. The logic and experience job candidates show by working through a tough situation "tells me much more than any certificate," Evans explained.

The Internet

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The options for users are straightforward: Choose a big Internet provider with deep pockets; opt for a smaller and often cash-strapped provider — most of which are likely to vanish, analysts said; **Internet providers, page 65**

Which of the following features would help you to select an Internet service provider?

BETTER RELIABILITY	62%
PRICE	61%
FIREWALL SERVICES	55%
SERVICE AND SUPPORT	52%
FINANCIAL STABILITY	50%
NATIONWIDE ACCESS	50%
EMERGENCY BACKUP	43%
WEB HOSTING SERVICES	40%

Base: 298 network managers. Multiple responses allowed; Top 8 answers listed.

Source: Business Research Group, Newton, Mass.

Certification classes are popping up for webmasters

By Kim S. Nash

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Certification programs "measure not necessarily your skills but your ability to memorize facts and take tests," Evans said.

A better way to screen would-be webmasters, he said, is to develop a hypothetical problem for them to solve. The logical and experience job candidates show by working through a tough situation "tells me much more than any certificate," Evans explained.

Webmastery 101

Programs for building better webmasters aren't offered by every computer training outfit, but several courses have popped up recently, interested IS workers should quiz instructors carefully before registering. There are no accepted minimum requirements for webmaster training, so each class offers something different.

● **Net Guru Technologies,** at **www.ngt.com,** specializes in Unix and networking classes but expanded to Internet training early this year. Net Guru's Webmaster Specialist class demonstrates how to write simple Hypertext Markup Language (HTML) pages. The five-day Internet Webmaster Engineering

course is more technical; it focuses on setup and management. Web servers and file transfer protocol servers. The Oakbrook, Ill.-based company recently finished a stint at Microsoft, teaching Microsoft's sales engineers about the Internet's infrastructure.

● **New Horizons Education,** at **www.newhorizons.com,** offers simple HTML training but little else related to creating or maintaining Web applications.

● Novell recently announced a webmaster certification class, similar to its Certified NetWare Engineer program. But the three Web-specific courses Novell plans — Web Authoring, Advanced Web Authoring and Web Server Management — won't start until next month. Only East Coast locations will offer them initially. See **education.novell.com** for details. In the meantime, NetWare 4.1 and TCP/IP Administration classes are prerequisites for Novell's webmaster certificate.

— Kim S. Nash

Load-balancing the Web

Router software boosts response, uptime for Web servers

By Patrick Dryden

Managers of multiserver Web sites will be able to boost performance and reliability with a "smart" routing system that should ship next month.

Start-up HydraWeb Technologies, Inc. is testing its HydraWeb routing software, which redirects World Wide Web traffic among clustered servers.

Routing software

Maintaining balance

HydraWeb determines which server can best handle the requests that bombard busy sites. And it lets managers fix and add servers without disrupting site operations.

"If HydraWeb works as promised, we could have one less or one firewall and maximize all our available hardware behind it,"

said Ken Alexander, vice president of the Internet Banking Systems group at Long Island Savings Bank in Melville, N.Y.

Alexander said he is eager to beta-test HydraWeb with the bank's four Web servers.

The servers provide information on mortgage rates and services and also support a multiple-listings service, which has supplied more than a million house photos since its launch in June.

"We've already had one processor fail on a server, but with HydraWeb, we could have kept running," Alexander said. He said he isn't aware of other products that provide that kind of load balancing and scheduled maintenance.

A beta tester at a global communications service provider, who asked to remain anonymous,

praised HydraWeb's "concept. "This system handles all the packet routing for you at a low level, so we don't have to deal with it through scripts," the beta tester said. HydraWeb so far has improved Web response times, according to this tester, "but we haven't really cranked it up yet to make sure we can cover the peak loads."

His development group needs faster response times for speedy new Web applications such as games. "With this system, we can route players over to another machine to keep them from ever slowing down," he said.

Choosing targets

HydraWeb provides more efficient handling of Web requests than current domain servers, according to Raj Sharma, president of HydraWeb Technologies in New York. As an intelligent rout-

Availability: Sept. 4
Price: $4,500 (two servers) to $30,000 (15 servers)
Function: Routes Web traffic to the best available server for optimal response and fault tolerance. Managers can add or remove servers without changing the TCP/IP address for the site.

er, HydraWeb tracks the performance of each Web server so it knows the best target before forwarding incoming requests.

Domain servers just direct traffic to the next available server in the queue, Sharma said.

Even if patched to enable some load-balancing, domain servers assume all servers have the same capabilities, he said.

"Many of our high-traffic customers need a better way to balance the load among different types of servers," said Brad Bosick, marketing vice president at NetGravity, Inc. in San Mateo, Calif., a developer of advertising

management software for Web sites. "Their servers get treated the same right now, but Hydra-Web is a smart solution that can route traffic to the best machine," Husick said.

Because Web sites are growing in business importance, managers are seeking tools to improve service and maintain a constant presence.

HydraWeb won't be unique for long, said Vinnie Price, management analyst at Gartner Group, Inc. in Stamford, Conn.

HydraWeb should ship Sept. 4. Prices range from $4,500 for two servers to $30,000 for 15 servers.

Web security is key to HP's 'net strategy

By Jaikumar Vijayan

Hewlett-Packard Co. is focusing heavily on security issues to make it a key differentiator in the crowded Internet market.

For example, at the recently concluded HP World show in Anaheim, Calif., the company spelled out a series of long-term initiatives it is taking to make the World Wide Web a safer place in which to conduct business.

Prime among them is the development of several technologies, including a reliable and secure operating system, technology for individual authentication over the Internet, secure and centralized access control and cryptographic technologies.

Finding its focus

HP's focus on such Web-related security issues and technologies addresses a vital user concern and could prompt other vendors to focus on similar issues, analysts said.

"A lot of the vendors out there are trying to tie all things to everyone," said Carl Lehmann, a program director at Meta Group, Inc., a market research firm in Stamford, Conn.

"HP has a good focus in a market that is very concerned about

security" of its Web-based applications, he said.

"For HP to come along and be one more company that says, 'We are here, we recognize the Internet, and we are here to provide Internet servers,' doesn't make sense," said Lewis Platt, CEO of HP.

Instead, the company will focus on delivering a range of products and technologies that will let corporations securely migrate business-critical applications to the Web, he said.

"Security is one of the most important features. . . . I would rank that as a pretty much high priority" for Web-based commerce, said Michael Kapsak, systems manager at B. F. Goodrich Co.'s Aircraft Integrated Systems division in Vergennes, Vt.

HP's road map ties together a series of key alliances and Internet-related announcements that the Palo Alto, Calif. company has made in the past several months.

They include the following:

• The acquisition in February of SecureWare, Inc., a Web security and operating system vendor. The two companies are developing software that will to organizations send sensitive data over the Web and provide access control and networking security.

• The release of the Praesidium Authorization Server in April. The first of a projected line of similar hardware products, the server authenticates users and controls their access to information on the network. The product is aimed at intranets, but HP will expand the technology to the Internet by year's end.

• The development of personal "smart cards," which will form the basis of user-level security, access and authentication.

Ira Goldstein will be in charge of HP's Internet strategy. Goldstein was recently appointed to the newly created position of chief Internet technology officer.

Goldstein is assuming HP from the Open Group Research Institute, where he served as executive vice president and chief scientist.

Internet providers struggle

or become your own Internet provider.

Larger providers that focus on higher-margin business users are more likely to have the financial staying power needed to survive and improve their networks to offer more services and features.

Many providers, such as PSI-Net, Inc. and UUnet Technologies, Inc., have already left the consumer market. Others, such as BBN Planet, never sold to consumers to begin with.

AVS, an America Online company, and Netcom On-Line Communications Services, Inc. sell to a mix of customers.

Some Internet providers differentiate their services based on measured usage vs. flat rates, geography and time of day. But none has the network infrastructure needed to offer users guaranteed quality-of-service options. And that is keeping some users away.

One such user is the U.S. Chamber of Commerce in Washington. The organization would like to put its national magazine, Nation's Business, online and pipe its video-based education seminars over the Internet.

"We'd be willing to pay more for more reliable basic service and guaranteed availability of high-bandwidth pipes for video," said Peggy Morgan, manager of MIS and finances at the chamber of

commerce. But Internet providers "best effort" isn't good enough today, she said.

Jordan Becker, vice president of network service at ANS in Elmsford, N.Y., said quality of service is something his company will probably offer in the future, but he wouldn't elaborate.

Despite the tremendous hype associated with Internet phones and running multimedia over the Internet, analysts said few if any providers have the technology to support high-bandwidth and time-sensitive traffic, let alone guarantee delivery.

Sink or swim

Analysts agree it is sink or swim time for Internet providers. Most predict massive consolidation.

"Service will continue to degrade if more money isn't spent to upgrade [service provider] networks," Nolle said. "Rather than continue to sink, [the providers] will first stop selling Internet access to consumers."

Many users are dissatisfied with the service they receive and have become their own Internet providers.

A dearth of high-speed Internet access lines, for example, forced the University of Southern California in Los Angeles to join with area businesses to buy their own 45M bit/sec lines to the Internet.

Morgan is considering doing the same thing with a T1 line.

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Has It Changed Your Life Yet?

Corporate Strategies

Banc One checks out Web

Check fraud, account errors targeted with verification service

By Mitch Wagner

Banc One Corp. last week launched a World Wide Web-based check imaging and verification service for its large customers.

The OneImage service uses innovative security technology to safeguard proprietary corporate information over the Internet. OneImage was designed to help Banc One customers — including insurance firms and other companies that write large volumes of checks — get a handle on check fraud and checking-account errors.

"All our customers need is a browser and access to the Internet, and they can have the same access to information that we have internally," said Rex Plouck, OneImage product manager at Banc One.

Most of the time, the checks are debited from customers' accounts automatically. But sometimes, customers want to look over unusual checks — those for very large amounts, for example — before allowing them to be deposited.

Until now, Banc One has sent checks to customers by courier or fax. "We'd have to go through all sorts of contortions," said Steve Dieringer, a vice president at Banc One.

Using OneImage, employees of Banc One's customers can now log in to Banc One's Web servers and check out an image of the exceptional checks using any browser. Once the image is on-screen, the employees can make a "pay" or "no-pay" decision on the check.

Security check

Data that moves over the Internet is encrypted using Secure Sockets Layer, a security technology that is standard on the Web.

Electronic commerce

Banc One also uses OM-Access, server security software from Open Market, Inc. in Cambridge, Mass. The OM-Access software confirms that users are who they claim to be and that they are permitted to access the services they are requesting. OM-Access then issues a ticket, or encrypted data string, that lets users access the Web services they have requested.

Each customer must have a SecureNet

Key from Digital Pathways, Inc. — which Banc One issues. The key is a gadget the size of a calculator and contains a chip that generates unique, one-time alphanumeric passwords.

When users access Banc One's check-imaging site, Digital Pathways software on the Web server generates an alphanumeric challenge. Users then type that challenge into their key, which generates and displays the correct response. Users must type the correct response into their Web browser before being allowed to see the OneImage application.

Banc One, in Columbus, Ohio, isn't the first bank to put applications on the Internet. About a dozen banks have been aggressive in this regard, including Wells Fargo Bank and Bank of America. However, Banc One is unusual in the security measures it has taken.

Indeed, Banc One could be the first company to use token-based security in

Banc One and its subsidiaries allow their customers to view checks in process using a new application that has a Web front end

an Internet commerce application, said security analyst Winn Schwartau, president of Interpact in Seminole, Fla.

"One of the biggest problems you have is electronic commerce is user authentication and identification," Schwartau said. "By using any kind of authentication device, you're increasing the security for a transaction."

Ekco gets housewares in order with AS/400 data warehouse

By Michael Goldberg
FRANKLIN PARK, ILL.

Thanks to its AS/400-based data warehouse, manufacturer Ekco Group, Inc. knows that turkey baster sales peak at Christmas, not Thanksgiving. This knowledge, in turn, is helping retailers reap double-digit increases in the sales of Ekco's housewares.

But there is some controversy about the ability of the venerable AS/400 to function well as a data warehouse. Some analysts question the fit of the AS/400 architecture to the task.

It's working

That isn't stopping Ekco, which has also discovered that the popularity of Mexican cuisine — particularly refried beans — has signaled a rebirth in sales of the potato masher.

This and other information have been gleaned by analyzing the company's historical sales database and comparing it with consumer spending data from A. C. Nielsen Co.

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Legal eagles look at year 2000

Stephen M. Honig and Theodore Grossman

The year 2000 software problem is finally getting some high-level management attention because of the potential costs of fixing it. Many of management's questions concern legal issues and liability, most of which are outside the expertise of IS professionals.

There are no court cases yet that establish the legal ground rules for assessing customer liability. Although specific legalities will depend on local law, there are some general guidelines.

What law applies to software?

Although software typically is "licensed," it is covered by Article 2 of the Uniform Commercial Code (UCC), which deals with the rights of buyers and sellers of tangible goods. Your rights revolve around whether your vendor breached a sales agreement with you, the user.

Is there a provision of the original sales agreement that the defective software breaches?

The best case for establishing a legal claim is that the defective software violates an express contractual warranty, such as 'an

Year 2000, page 73

Stephen M. Honig

Theodore Grossman

(www.computerworld.com) AUGUST 26, 1996 COMPUTERWORLD

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Legal eagles look at year 2000 issue

guage that describes the software as performing all the customer's needs beyond the year 2000.

The software contract also may contain an implied warranty that the software has been sold by an expert vendor upon whom an inexperienced customer relies.

If a warranty has been violated, why can't I just require the vendor to fix the problem?

The UCC limits the statute of limitations for asserting a claim to four years from delivery, even if the defect manifests itself years later.

The only exception is for warranties that speak to future performance.

What other legal options do I have?

If your software was acquired more than four years ago, any relicensing within the past four years — particularly upon payment of an additional fee — may restart the clock.

Also, if the software is subject to a maintenance agreement, the broad language of that agreement may be construed to

require fixing the code.

Further, if you engage a consultant to help design your software, the consultants may have an obligation in the year 2000 problems.

Finally, many states have adopted laws rendering illegal any activity that is an unfair commercial practice. Perhaps the repeated sale of faulty software would constitute such a practice.

What about the vendor's rights if I hire someone else to reprogram?

An original vendor may claim that management has disclosed trade secrets by delivering the intellectual property to other programmers, accounting firms or consultants in violation of copyright laws or express nondisclosure agreements.

What is management's best tactic?

Options here include using the threat of a lawsuit against your vendors to get them to fix the software or to drive down the price of fixing the software, trying to get vendor cooperation, replacing the software entirely or having it reworked by independent vendors.

It is important that IS and legal forces be directed at an early stage.

Only forceful management action can make sense out of what is a complex and generally underappreciated crisis that is made more difficult by its interdisciplinary nature.

Honig is an attorney at Goldstein & Manello, a law firm in Boston. He specializes in high tech. He can be reached at xhonig@goldav.com. Grossman is a senior member of the faculty at Babson College in Wellesley, Mass. He teaches information technology and accounting and can be reached at grossman@balsam.edu.

For Europe, dollar conversion adds to the confusion

European organizations dealing with the year 2000 conversion effort have the added task of retrofitting their financial systems for a pan-European currency.

The move to the European dollar will affect financial markets and settlement systems in January 1999. A single currency will be introduced in 2002.

The changes are expected to cost European banks more than $200 million each to convert their systems and procedures, said Alec Nacamuli, director of payments at IBM Consulting Group in London.

SAP is ready

On the other hand, firms that are standardizing on global, packaged software — such as SAP AG's R/3 client/server software — are well-positioned to deal with the arrival of a pan-European currency. This is because SAP and other vendors have already built in the necessary conversions.

That was one of the key reasons Novik Hydro A/S, a multibillion-dollar Norwegian chemical company, chose to standardize its global operations on R/3.

"The year 2000 issue and Euro currency were both big factors two or three years ago when we were deciding on software," said Andy Haler, chief information officer at Hydro Agri North America, the company's U.S. subsidiary in Tampa, Fla. "Now, it's a nonissue for us."

— *Thomas Hoffman and Julie King*

AS/400

As typical users of IBM's AS/400 computer, Elcoi's managers aren't interested in the "bleeding edge" or in hiring legions of programmers. They are hungry for new ways to extract meaningful information from data they have been collecting for years.

"We're trying to get as much detailed information about what's happening as close to the consumer end of things as we can," said Charles Dietz, director of information systems at Elcoi's data center in suburban Chicago.

The company has built the start of a data warehouse with 10 gyte of sales, manufacturing and financial information. Elcoi uses Silvon Software, Inc.'s Sales Tracker query and reporting tool for analysis.

Change for the better

Recent changes in the AS/400 hardware and operating system make the platform more suited to data warehousing applications, users and analysts said.

For example, IBM has introduced better-performing hardware that uses 64-bit chips. And the AS/400 now has a gateway for Microsoft Corp.'s Open Database Connectivity programming interface that lets Windows PCs access a server database.

But there is still some skepticism about whether the AS/400 can handle complex tasks that involve terabyte-size databases.

Kevin Strange, a research director at Gartner Group, Inc. in San Jose, Calif., said the built-in

database of the AS/400 needs more tools to support "industrial-strength" analysis applications.

"If an organization is committed to the AS/400, there are certainly now more options to use it in a strategic decision support system. But the complexity of a [large] data warehouse is beyond the AS/400," Strange said.

Port deal

A deal announced last month by ShowCase Corp. might help. The company is porting the Essbase analytical database application from Arbor Software Corp. in Sunnyvale, Calif., to the AS/400. This is the kind of move IBM needs to continue making, observers said.

It boils down to "providing tools that are widely available on other platforms" such as Unix and Windows NT, said analyst Aaron Zornes, an executive vice president at Meta Group, Inc., in Burlingame, Calif.

A longtime AS/400 shop, Sports Authority, Inc. in Fort Lauderdale, Fla., is a beta-test site for the Essbase port. The sporting goods retailer is piloting a system that store managers and top executives will use to extract sales trends from a 12G-byte data warehouse.

So far, Sports Authority users are seeing answers to queries in 10 minutes from the AS/400 that took three hours on a PC server, said David Bremer, executive information administrator at the company.

"This is data that before was virtually inaccessible," Bremer said. In the future, "we expect to be able to see whether T-shirt sales in the South are better than in the North," he said.

Briefs

CSC merger approved

The proposed merger of Computer Sciences Corp. (CSC) and The Continuum Co. was approved recently by shareholders of both corporations.

Portable teams with Sabre

Portable Software has reached an agreement with Sabre Travel Information Network to integrate its Xpense Management Solution expense report software with

Sabre's Business Travel Solutions automated travel planning tools. The combined system is expected to begin shipping in December.

Vissoft adds to your 2000 line

Vissoft, Inc. has expanded its year 2000 products to support other languages and platforms, in addition to its current support of Cobol, Assembler, Natural and PL/1 languages, Vissoft plans to extend support to Cobol for IBM DOS/VSE and AS/400, Fortran for IBM VMS and other languages.

Managing

Selling

Stop shouting! Gentle persuasion is the best way to get users to help keep data under lock and key.

By Steve Alexander

It's the kind of message that has to be communicated gently but effectively.

How do you spread the message of data security throughout a company? How do you get people to really practice security, rather than just pay it lip service or ignore it?

It's possible to get managers and users to take security seriously. The secret, information systems security managers say, is to enlist management's help, work with users instead of playing security cop, and make security easy.

"Management has to provide the resources security needs and also has to practice security itself. You have to have the help from the top, and that's the bottom line," says Bob Cartwright, an IS information protection specialist at Pacific Bell's network integration business.

One way to enlist management's support is to explain the liability potential. Cartwright says. Top managers, as officers of a public company, could be sued if it appears they knew about a security risk and did nothing about it, he explains.

Finding a balance

One company where management got the message is Detroit Edison Co., an electric utility that serves about 2 million customers in southeastern Michigan. Last November, it won an "information protection program of the year" award from the Computer Security Institute, a San Francisco organization of security professionals.

"We work with users to identify the risks and the controls that meet their needs. But the balance is to be struck between ease of use and security is up to them," says Tom Peltier, IS supervisor of information protection at Detroit Edison. That stance allows him to avoid being an information security cop. "My job [in] not punitive. My job is protection," he says.

Peltier says the company won the award largely because senior management sup-

ported his efforts. Before Peltier joined Edison about three years ago, a non-IS executive convinced management that information gave the firm a competitive edge. Peltier built on that foundation by gently reminding management that security programs helped protect the company's assets. "When you tell them they can be held personally liable, you sell that as judiciously as possible. But you do have to sell it," he says. "When I took over, information security had three people and a $250,000 budget. Now it has a staff of 10 and a $1.2 million budget."

Security people need to escape the stereotype of being cops, says Ed Hepker, manager of information security at USA Group, Inc., an Indianapolis student loan

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COMPUTERWORLD

How do you prod users into the security habit? Join
an online discussion this week at our Web site,
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Security

guarantor and educational consultancy. "Most people have a predefined notion that
IS security is there to tell them what they can't do," Hepker says. "We have a lot of
work to do to break through that perception." One way to go about it: Stop telling
users security horror stories, Hepker says.

"Horror stories just roll off. And the more horror stories you tell, the more people
think of you as selling fire insurance. The insurance
mentality has greatly hurt IS security in a lot of organi-
zations, because people don't want to buy fire insur-
ance and are always looking for ways to buy as little as
possible," Hepker says.

A better approach is to sell security as a competitive
advantage. "If you show how security contributes to
the overall goals of the corporation, anybody in the cor-
poration will be willing to invest in it," Hepker says.

Sometimes it's helpful to give users small gifts such
as computer disk holders with messages that remind
them to practice better security, Cartwright says. He
believes gadgets work as security reminders because
users love the items and often ask for them.

"Sometimes security can be improved if management
gives users a list of what is expected of them, says Wil-
liam Hugh Murray, executive consultant for IS security
at Deloitte & Touche in Wilton, Conn. "It should be a
relatively short list, users should be reminded of it fre-
quently, such as by E-mail, and the list should be made
easily accessible by putting it on the server," he says.

Management can enforce security by asking each
employee to monitor neighboring workers for compli-
ance, Murray says. "The employee is not being a tattle-
tale; he's just doing his job."

IBM's security program was another model of enforcement. Murray says. Confi-
dential data that wasn't locked up at night was confiscated. Security and a receipt
was left in its place. The first time this occurred, the user could retrieve the data
from security with the receipt; the second time, the user and his or her manager had
to retrieve the data together; the third time, the user and manager had to go to a
vice president; there was no fourth time.

When it comes to encouraging workers to comply with security rules, Murray

likes to tell the story of the security manager who walked the halls without a securi-
ty badge until a worker asked him to produce one. The manager did and gave the
worker a $100 bill. After this occurred several times, workers became more eager to
check for badges.

One thing users should be told: Report anything unusual. "Most attacks on infor-
mation systems today involve some amount of duping
or fooling users by asking questions that shouldn't be
answered. When a user gets a strange phone call, he
should tell management or the security staff about it,"
Murray says.

Jim Milner, a user interface specialist involved in se-
curity at Phillips Petroleum Co. in Bartlesville, Okla.,
says there are ways to improve traditional password
security. One simple but effective technique: Mandate
that passwords contain at least two numbers.

"It's harder for someone to 'guess the password,
and, because it's not a word, you can't run it through
dictionary programs. If a password is in any dictio-
nary, there are lots of programs that will beat it to
death until they find out what the password is," Milner
says.

And require that when a password is changed,
there can be no more than three letters from the old
password, Milner says. He also favors passwords that
are acronyms for easy-to-remember phrases.

"Use the first letter out of each of the first five to
eight words of a phrase, such as 'Now is the time for
all good men to come to the aid of their country.' Now
you've got a nonbreakable password, and it's easy to
remember the phrase," Milner says.

Peltier, as part of building shared responsibility, takes a tolerant attitude toward
users who write down their passwords. Rather than berate them, he just urges them
to be careful.

The message in all this advice seems much the same: Information security isn't
impossible. It requires a series of small steps rather than a cosmic solution. ▪

Alexander is a freelance writer in Edina, Minn.

Spreading the word

William Hugh Murray, executive
consultant for information systems
security at Deloitte & Touche in
Wilton, Conn., has a simple list of
what management should tell
workers to encourage better
security habits. Much of it is
traditional:

• Change passwords

• Don't use simple passwords

• Don't write down passwords

• Don't share passwords

But he also adds an item he says
seldom gets communicated to users:

• Report anything unusual to a
manager

'net schooling in Canada

Information technology professionals north of the bor-
der can update their skills without having to fly to a sem-
inar or trudge off to a classroom.

A public/private partnership in Canada has unveiled
custom training over the Internet to address a skills gap
among IT professionals.

A student can learn at home or in the office, any time
and for any length of time.

The program — Mentys: The Internet Computer Insti-
tute — was formed by Global Knowledge Network, Inc.
in Waltham, Mass., and Canada's Software Human Re-

source Council (SHRC), a nonprofit organization funded
by the federal government and businesses. It is charged
with addressing labor issues in
the country's software industry.

Mentys released the field-test
version last month; full-service
production is expected by Decem-
ber.

The program is available only in
Canada, but curious foreigners
can check it out on the World Wide
Web at www.mentys.ghnet.ca/.
Students will be able to sign up

for courses such as Introduction to Client/Server Archi-
tecture, Building Client/Server Applications, Internet
Applications, Software Mainte-
nance and more.

The SHRC sees the training as a
key to Canada's future economic
health.

Officials say a skills shortage is
growing as Canadian firms shift
from legacy systems to a rapidly
growing client/server environ-
ment.

— *Rick Saia*

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October workshops

> *A list of workshops for IS managers. Some workshops are offered later in the year in other cities. To find the time and location most convenient for you, contact the sponsor.*

SOFTWARE LICENSING AGREEMENTS. Cincinnati, Oct. 1; Cleveland, Oct. 2; New York, Oct. 8; Boston, Oct. 9 – Fee: $495. Contact: Professional Learning Center, Irvine, Calif. (714) 725-9758. Fax: (714) 725-9953. E-mail: 72110.2233@compuserve.com.

EFFECTIVE SKILLS FOR TECHNICAL MANAGERS. Toronto, Oct. 2-4; Washington, Oct. 8-11 – Fee: $1,595-$1,995. Contact: The Learning Tree International, Inc., Reston, Va. (800) 843-8733. World Wide Web address: www.learningtree.com.

INTERNET AND SYSTEM SECURITY: ATTACKS AND COUNTERMEASURES. Washington, Oct. 8-9 and Oct. 22-25; New York, Oct. 29-Nov. 1 – Fee: $1,595-$1,995. Contact: The Learning Tree International, Inc., Reston, Va. (800) 843-8733. Web address: www.learningtree.com.

PROJECT MANAGEMENT: SKILLS FOR SUCCESS. Washington, Oct. 2-4 and Oct. 22-25; Boston, Oct. 29-Nov. 1 – Fee: $1,595-$1,995. Contact: The Learning Tree International, Inc., Reston, Va. (800) 843-8733. Web address: www.learningtree.com.

SOFTWARE QUALITY ASSURANCE. Washington, Oct. 2-4; Los Angeles, Oct. 29-Nov. 1 – Fee: $1,595-$1,995. Contact: The Learning Tree International, Inc., Reston, Va. (800) 843-8733. Web address: www.learningtree.com.

PROGRAMMING FOR INTRANETS AND THE INTERNET. Washington, Oct. 2-3; Boston, Oct. 10-11; San Jose, Calif., Oct. 17-18 – Fee: $695. Contact: DataTech Institute, Clifton, N.J. (201) 478-5400. Fax: (201) 478-4418. Web address: www.datatech.com.

COMMUNICATION AND INTERPERSONAL SKILLS: A SEMINAR FOR TECHNICAL PROFESSIONALS. Washington, Oct. 2-4; Newport Beach, Calif., Oct. 21-23; Chicago, Oct. 30-Nov. 1 – Fee: $1,195-$1,575. Contact: American Management Association, New York, N.Y. (800) 262-9699.

SOFTWARE: ISSUES, CONTRACTS, RE-NEGOTIATIONS. Boston, Oct. 7-8 – Fee: $995. Contact: International Computer Negotiations, Inc., Winter Park, Fla. (407) 740-0700. Fax: (407) 740-0768.

FIREWALLS AND INTERNET SECURITY. St. Louis, Oct. 8; Somerset, N.J., Oct. 10-11; Irvine, Calif., Oct. 21-23; Denver, Oct. 24-25 – Fee: $995. Contact: Data-Tech Institute, Clifton, N.J. (201) 478-5400. Fax: (201) 478-4418. Web address: www.datatech.com.

SURVIVAL IN TELECOMMUNICATIONS MANAGEMENT. New York, Oct. 7-9 – Fee: $995. Contact: BCR Enterprises, Inc., Hinsdale, Ill. (800) 227-1234 or (708) 986-1432. Fax: (708) 323-5324.

DATA WAREHOUSE TECHNOLOGY: ARCHITECTURE, TOOLS AND IMPLEMENTATION STRATEGIES. Chicago, Oct. 8-10 – Fee: $4,195. Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880. Fax: (508) 470-0526. E-mail: ConfReg@dciexpo.com. Web address: www.DCIexpo.com.

IDENTIFYING AND CONFIRMING USER REQUIREMENTS. Washington, Oct. 8-11; Boston, Oct. 22-25 – Fee: $1,595-$1,995. Contact: The Learning Tree International, Inc., Reston, Va. (800) 843-8733. Web address: www.learningtree.com.

SOFTWARE PROJECT PLANNING AND MANAGEMENT. Toronto, Oct. 8-11; Boston, Oct. 15-18; Los Angeles, Oct. 29-Nov. 1 – Fee: $1,595-$1,995. Contact: The Learning Tree International, Inc., Reston, Va. (800) 843-8733. Web address: www.learningtree.com.

LEASING NEGOTIATIONS WORKSHOP. Boston, Oct. 9-11 – Fee: $1,395. Contact: International Computer Negotiations, Inc., Winter Park, Fla. (407) 740-0700. Fax: (407) 740-0768.

STRATEGIC IS PLANNING: FOR SENIOR MANAGERS. Scottsdale, Ariz., Oct. 9-11 – Fee: $1,350-$1,550. Contact: American Management Association, New York, N.Y. (800) 262-9699.

MEASURING AND BENCHMARKING IT PERFORMANCE. Chicago, Oct. 14-15 – Fee: $995. Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880. Fax: (508) 470-0526. E-mail: ConfReg@dciexpo.com. Web address: www.DCIexpo.com.

BUSINESS PROCESS RE-ENGINEERING SEMINAR. Greenwich, Conn., Oct. 15-16 – Fee: $875. Contact: Pierson Applications Development, Inc., Stamford, Conn. (203) 322-1606. Fax: (203) 329-0173.

PREVENTING APPLICATION MELTDOWN. Chicago, Oct. 16 – Fee: $495-$695. Contact: Hurwitz Group, Inc., Newton, Mass. (617) 894-0845. E-mail: info@hurwitz.com.

INTERNET APPLICATION DEVELOPMENT FOR THE ENTERPRISE. Washington, Oct. 16-18 – Fee: $1,195. Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880. Fax: (508) 470-0526. E-mail: ConfReg@dciexpo.com. Web address: www.DCIexpo.com.

INFORMATION SYSTEMS PROJECT MANAGEMENT. Washington, Oct. 16-18; Denver, Oct. 21-23; New York, Oct. 30-Nov. 1 – Fee: $1,295-$1,490. Contact: American Management Association, New York, N.Y. (800) 262-9699.

IMPROVING YOUR INTERNAL CONSULTING SKILLS FOR IS PROFESSIONALS. Atlanta, Oct. 16-18 – Fee: $1,295-$1,490. Contact: American Management Association, New York, N.Y. (800) 262-9699.

HOW TO MANAGE, MOTIVATE AND COACH SUPPORT PROFESSIONALS. Atlanta, Oct. 21-22 – Fee: $595-$695. Contact: Help Desk Institute, Colorado Springs, Colo. (800) 248-5667. Fax: (719) 528-4250. Web address: www.HelpDeskInst.com.

MANAGING TECHNICAL PROFESSIONALS. Chicago, Oct. 16-18; New York, Oct. 21-23 – $1,245-$1,430. Contact: American Management Association, New York, N.Y. (800) 262-9699.

MESSAGING, GROUPWARE AND INTRANETS. Orlando, Fla., Oct. 22-23 – Fee:

$1,195. Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880. Fax: (508) 470-0526. E-mail: ConfReg@dciexpo.com. Web address: www.DCIexpo.com.

BUSINESS PROCESS RE-ENGINEERING. Washington, Oct. 22-25 – Fee: $1,595-$1,995. Contact: The Learning Tree International, Inc., Reston, Va. (800) 843-8733. Web address: www.learningtree.com.

BEST PRACTICES IN IMPLEMENTING LOTUS NOTES. Orlando, Fla., Oct. 24-25 – Fee: $995. Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880. Fax: (508) 470-0526. E-mail: ConfReg@dciexpo.com. Web address: www.DCIexpo.com.

BUSINESS ENGINEERING AND THE CORPORATION. Dallas, Oct. 28-29 – Fee: $1,050. Contact: The Information Management Forum, Atlanta, Ga. (770) 455-0070. Fax: (770) 455-0082. E-mail: timf@mindspring.com. Web address: www.infomgmtforum.com.

INTERNET ACCESS, SECURITY AND FIREWALLS. San Francisco, Oct. 29-30 – Fee: $995. Contact: BCR Enterprises, Inc., Hinsdale, Ill. (800) 227-1234 or (708) 986-1432. Fax: (708) 323-5324.

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Check our Web site (www.computerworld.com) for information on upcoming workshops and conferences.

Calendar announcements should be submitted at least eight weeks prior to the event and include the title of the event, dates, location, theme or focus, keynote or major speakers, principal topics and a contact person, organization and phone number.

When does it take three management applications to manage a single switch?

Buyer's Guide

The costs and challenges of
managing PC LANs have users
turning to management suites

THE
DESKTOP
DILEMMA

BY ROSEMARY CAFASSO

editing a LAN management can be like a ball and chain for an information systems shop. Often, IS has been stuck with this job after user departments determined they could no longer manage it. Now IS is being told that it has to live with desktop and LAN management, it must find better ways to handle it.

Corporations "want to minimize staffing requirements and gain consistencies for PC LAN administration," says Richard Villars, director of network software research at International Data Corp. in Framingham, Mass. "Companies are saying, 'If we can't manage from a central site, then we should at least have the same approach from department to department.'"

Perhaps the biggest incentive for better desktop management is cost.

Estimates vary, but market research firms, such as Gartner Group, Inc. in Stamford, Conn., and Forrester Research, Inc. in Cambridge, Mass., claim that because of poor management, inconsistencies and redundancies, the average organization has been spending thousands of dollars per year to keep each desktop up and running. For example, Forrester Research estimates that companies spend $3,630 annually for day-to-day management of each PC.

There have been plenty of product choices for PC and LAN management, from point products that handle a specific monitoring or management task to full-blown enterprise management platforms. But the type that has gained favor among managers recently is desktop management suites.

These tool combinations handle desktop and configuration management, remote monitoring and several other management functions, such as software metering and distribution, from one package.

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Snapshots

Intel Corp. Network Products Division

Santa Clara, Calif. (www.intel.com)

LANdesk Management Suite: 35% market share.

Major components: Remote control, hardware and software inventory, software distribution, server monitoring, software metering, print management, integrated reporting and virus scanning.

First packaged as an integrated suite: January 1995.

Level of integration: Centralized database and alerting system. Users can create scripts to customize interfaces or automatically generate tasks.

Pricing: Base pricing, including a five-node license — $780.

Symantec Corp.

Cupertino, Calif. (www.symantec.com)

Norton Administrator Suite: 23% market share.

Major components: Hardware and software inventory, software metering, software distribution, desktop virus protection, desktop configuration management and remote control.

First packaged as an integrated suite: April 1996.

Level of integration: Single Windows-based console to access all suite applications, common user interfaces, common application database for components.

Pricing: $635 for a 10-node license pack.
Continued on next page

DESKTOP DILEMMA

The big advantage of a suite is that a number of management tasks can be performed without having to fumble from one product to another. So IS managers could plan software upgrades by first reviewing inventory data and then launching an electronic distribution of the software. They could then keep tabs on activity through a metering component — and do this all from one management package.

Of course, suites present a big downside: Customers essentially rely on one source to provide them with a range of critical products. But users say they are increasingly willing to make this trade-off to avoid the hassle of integrating tools themselves.

The players

The best-known suites are those offered by Intel Corp., Symantec Corp., McAfee Associates, Inc. and Novell, Inc. By last year, Microsoft Corp. had snapped up an 8% chunk of this market with its new Systems Management Server product.

A customer who evaluates management suites is bound to get an earful on integration from the vendors. They're all working to tighten integration of their tool offerings in-

EMERGING MARKET

While an assortment of network and desktop monitoring and management tools have been on the market for years, an emerging market segment of desktop management suites is capturing users' attention. International Data Corp., which defines this market as desktop administration and includes vendors that sell suites or tool bundles, estimated that this segment will generate $418 million worldwide this year and $800 million in 1999.

1995 DESKTOP ADMINISTRATION MARKET SHARES

Intel	35%
Symantec	23%
McAfee Associates	15%
Novell	11%
Microsoft	8%

ternally and of their suites with other products. McAfee is a good example. Its suite is built from components that the company picked up through several acquisitions, so the company is working to migrate all the tools to one database. It also provides a link to Hewlett-Packard Co.'s OpenView

to allow customers to view inventory data collected by the McAfee tool from within the OpenView environment.

Selecting the suite that best fits your organization's needs won't be easy. The suites have many of the same basic tools — a desktop management function and key management tools such as metering and distribution — so there's no obvious winner from strictly a core function perspective, according to industry analysts and IS managers.

The suite vendors now support Novell's NetWare and Microsoft's Windows NT. The pricing is similar as well, with each leading package offering a starting price of less than $800 and support for between five and 10 users.

But a closer look shows that each vendor puts its own spin on its management suite. That could help narrow the choices. Intel, with the biggest chunk of the market, has

HOW DOES A MANAGEMENT SUITE IMPROVE OPERATIONS?

"We have a lot of remote users, and if they are having a problem, we don't have to send someone there. With [Novell's ManageWise], you can take a look at what the workstation is going through from here. It facilitates training because you can troubleshoot with them. You can walk them through it."

— Simon Taufiqua, network administrator,
controller's division,
New York University, New York,
and a Novell user

"It's difficult to put a finger on hard dollars, but we have been able to accomplish more things and take on more projects."

— Jane Aguilar, senior systems engineer,
Mapco, Inc., an energy company in Tulsa, Okla.
Aguilar installed Intel's LANdesk last year.

"It's knowing what's going on the network. In a campus like ours, it isn't hierarchical. It's a changing environment. We need to know what's up, what's down, what's going on."

— John-Eric Langdale, systems analyst,
University of California School of Medicine, San Francisco,
which runs Novell's ManageWise

"Software metering allows us to save a lot of money. In the past, we would buy a whole suite of software for someone. Now we can control the number of copies we have on the net and run them legally. It gives us a smart way of determining when we need to buy more copies."

— Diane dalVecchio, senior network administrator,
Smith Environmental Technologies Corp.,
Plymouth Meeting, Pa.,
which runs McAfee's Saber LAN workstation package

worked with a broad range of partners, including HP and IBM's Tivoli division, to link to their bigger enterprise management products. In addition, Microsoft and Novell use some of Intel's LAN management technologies in their products.

Novell has a clear edge as a networking leader in the group. Its packaging also differs because it offers metering and distribution capabilities as add-ons, whereas other providers bundle those tools in their core suites.

One potential advantage for Symantec is its plan to offer a modified version of its suite that would essentially let buyers pick and choose the components they want.

McAfee has its own twists. For instance, it recently announced plans to link its suite with a help desk package from Vycor Corp., which it acquired earlier this year.

Users' different needs

Ultimately, industry observers and IS managers say companies should pick a suite that works best with the way their organization wants to handle desktop management. "Different environments will be successful with different products," says Ray Paquet, a senior research analyst at Gartner Group. "Ask yourself, 'What is my environment and what will the needs be?'"

Overall, IS and LAN managers say management suite packages have provided big benefits by helping them gain control over what has been a frequently chaotic LAN environment. The accompanying articles provide a look at how the suites are holding up at a number of organizations, based on interviews with users of each of the four top providers of suites. ●

Cafasso is a freelance writer in Walpole, Mass.

WHY IS SUITE INTEGRATION IMPORTANT?

"Integration is quite crucial. The interface is the same, and it's nicely tied together. So it reduces the learning curve and keeps it smooth. I think it's a little cheaper than going best of breed."
— *Lance Bedingfield, systems engineer, Intermountain Health Care, St. George, Utah*
Bedingfield oversees a 200-node Novell LAN using Intel's LANDesk suite.

"They've taken the burden of making all the components work together off the shoulders of the administrator." Integration "is the last thing you want to worry about. You just want to get in there and make it work."
— *Simon Taufique, network administrator, controller's division, New York University, New York, and a Novell user*

WHAT ADVICE WOULD YOU GIVE IS MANAGERS?

"Do adequate testing before implementation. There were a couple of surprises we didn't catch [because] our pilot was a narrow focus of machines. You need to get a cross section of systems tested before a final selection is made."
— *Paul Bekwach, senior systems analyst, Herman Miller, Inc., Zeeland, Mich., and a Symantec customer*

"Determine what your needs are, which can be the hardest part of all."
— *Diane delVechie, senior network administrator, Smith Environmental Technologies Corp., Plymouth Meeting, Pa.*

"Everyone has their own likes and dislikes, so go out and identify three or four products and test them. If you've been driving a Chevy and it starts every morning, it's hard to go out and buy a Plymouth."
— *David Disky, vice president of MIS, People's National Bank and Trust, Ottawa, Kan., and an Intel user*

WHAT ARE SUITES MISSING?

"The major shortcoming is it's really not a comprehensive network management tool. They are not complete and can't compete with a NetView or OpenView. . . . I want to be able to look at my network, to be able to go all the way from the desktop to routers, bridges, traffic [and] any bottlenecks."
— *Jose Aguilar, senior systems engineer, Mapco, Inc., Tulsa, Okla., and an Intel customer*

"Make it faster. Whatever you have today, make it faster, like inventory collection and data replication." On the inventory side, the system scans for hardware and software devices whenever a workstation comes on. The process takes anywhere from 10 seconds to two minutes, and he wants the process to be invisible to users.
— *Paul Bekwach, senior systems analyst, Herman Miller, Inc., Zeeland, Mich., and a Symantec customer*

"Tighter integration with Novell's [Novell Directory Services]. I would rather have just one product rather than toggling back and forth between NetWare's administration tools and ManageWise."
— *Simon Taufique, network administrator, controller's division, New York University, New York, and a Novell user*

Snapshots

McAfee Associates, Inc.
Cupertino, Calif. www.mcafee.com)

Saber LAN Workstation 6.0: 18% market share. *

Major components: Software metering, desktop management, software and hardware inventory, and software distribution.

First packaged as an integrated suite: June 1996. It is based on two suites: the former Brightworks and Saber Software Corp. tool sets, which McAfee acquired.

Level of integration: Individual components use separate databases, but the company is working to move the tools to a single, SQL-based system.

Pricing: Approximately $40 per node.

* The McAfee market share is a combination of the Brightworks and Saber market shares.

Novell, Inc.
Orem, Utah.(www.novell.com)

ManageWise: 11% market share.

Major components: Remote control, hardware and software inventory, virus detection, file transfer and configuration-change management.

First packaged as an integrated suite: January 1995.

Level of integration: Components share data and access information from a Btrieve database. Tools use a common interface.

Pricing: $795 for five users.

This kind of editorial quality...

Lesser-known PC LAN tools
hold ground in niche areas

BY JOE MALLOY

Management products are so plentiful these days as to boggle your mind. Possibly the easiest way to look at the market is to divide it into two. On one side are the four vendors that push the bulk of the market — Intel Corp., Symantec Corp., McAfee Associates, Inc. and Novell, Inc. On the other side is a handful of other vendors, several of which are extending into the arena from other industry segments.

"No vendor has locked up the entire market," says Rick Villars, an analyst at International Data Corp. in Framingham, Mass. Computerworld has gathered opinions about products other than those from the Big Four.

Analysts and users provided views on the Desktop Management Suite (DMS) from Seagate Software, Inc.'s Network and Systems Management Group in Cupertino, Calif.; ServerWorks Manager from Digital Equipment Corp.; TME 10 NetFinity from Tivoli Systems, Inc. in Austin, Texas; Systems Management Server (SMS) from Microsoft Corp. in Redmond, Wash.; Cenergy from Tally Systems Corp. in Hanover, N.H.; and the Enterprise Desktop Management Manager (EDM) from Novadigm, Inc. in Mahwah, N.J.

Tivoli's NetFinity lets users set up alerts

Analysts say if these vendors want to keep up with the larger players, they must build relationships with hardware vendors. "The goal of all products is to simplify the solution," Villars says.

The companies that bundle with hardware "have a chance of getting a greater market share," says Chet Geschickter, managing director at Hurwitz Group, Inc. in Newton, Mass. That is where much of the battle is being fought, he says.

Users say they want the ease of use that such combinations provide. But simply bundling servers with hardware won't satisfy all users; the products need to be improved, too. For instance, they need tighter integration with enterprise management systems such as IBM's NetView, Hewlett-Packard Co.'s OpenView and Cabletron Systems, Inc.'s Spectrum. "All three products have the same weaknesses. They are integrated more in spirit than technology, but they all have recognized the right ideas," Villars says.

In the future, users should see better links to enterprise management systems, increased ability to do things automatically and increased support for the Windows NT platform, Geschickter says.

Users expect all the products to at least have an inventory system, a tie to a software distribution facility and remote access, Villars says. Beyond

that, each product includes additional distinguishing features.

Seagate's Desktop Management Suite
www.seagate.com

DMS combines WinInstall from OnDemand Software, Inc. in Naples, Fla., WinLand from Frye Computer Systems, Inc. in Boston and Proxy tools from OEM supplier Funk Software, Inc. in Cambridge, Mass. The suite provides inventory, software distribution and remote control capabilities.

Proxy, a remote control program, helped the Welborn Clinic in Evansville, Ind., trim the time information systems staffers spent in the field. "Proxy probably pays for itself every week," says Jeff Coman, systems administrator at the clinic.

And WinInstall, the suite's software distribution application, created excitement among users. Users expressed basic satisfaction, but they want tighter integration, better documentation and control of a Windows 95 machine via Proxy.

Seagate says a new version will be available at the end of the month. It will have a Seagate antivirus add-on module and support for NT 4.0 and 32-bit applications.

Digital's ServerWorks Manager
www.dec.com

Digital bundles ServerWorks Manager, a package of network management tools, with its Prioris servers. The tools are ServerWorks Manager Simple Network Management Protocol agent, ServerWorks Manager Applications and Manage-Works Workgroup Administrator. This trio lets administrators perform network management and administration, server management and LAN analysis.

Because it already holds an established place in the hardware market, Digital doesn't need to search for a hardware partner, Villars says.

The company claims the product's open architecture makes integration with enterprise management products such as NetView and Open-View relatively seamless.

Tivoli's TME 10 NetFinity
www.tivoli.com

TME 10 NetFinity is another offspring of a hardware vendor. This makes bundling it with IBM's server a natural response. (Tivoli became a division of IBM when the two companies merged in March.)

With this suite of tools, administrators can remotely access and manage systems, collect software inventory and perform other management tasks.

Several of those features appeal to users. Hardware identification, remote control, remote access support and screen capture won over Vince Pepe, a distributed systems analyst at Washington Mutual Bank in Seattle. Pepe has one request. "I would like to see them include packet capture and

the ability to examine the packet structures. That would complete the package for me," he says.

The ability to set up alerts works well for Pepe and Lloyd Blauen, a senior systems engineer at OR Group, a subsidiary of US Air in Arlington, Va. When Blauen was out of town, he knew someone had rebooted his machine when the alert dialed his beeper.

Microsoft's Systems Management Server
www.microsoft.com

With SMS, an administrator can automatically inventory software and hardware and distribute and install software as well as remotely access systems to correct problems.

Analysts and users hope SMS will smooth out the rough edges with Version 1.2, which is in beta testing and scheduled for release by fall. "It's still a 1.0-type version," says Angel Cortez, senior systems analyst at Nordstrom, Inc. in Seattle.

That isn't to say Microsoft isn't on the right track. "They have a vision of a decent scalable architecture. It's not there yet, but they have the right idea" says Chris King, an analyst at Meta Group, Inc. in Reston, Va.

And certain strengths are already in place. "SMS solves a lot of our troubleshooting needs," says Andrew Drooker, project manager at Turner Broadcasting Sales, Inc. in Atlanta.

Tally Systems' Cenergy
www.tallysys.com

Cenergy incorporates WinInstall for software distribution, NetCensus for inventory and Centa-Meter for software license metering and monitoring to achieve what Tally Systems calls a desktop asset management suite.

It's not uncommon for a company to have more than one management package. "Very few users have only one product. They can have three, four, five," Villars says. Tally Systems recognizes this and recommends using Cenergy alone or with Microsoft's SMS. The company claims it works well in the SMS environment.

Novadigm's Enterprise Desktop Manager
www.novadigm.com

Novadigm defines EDM as a distributed software environment that ensures each user has the correct version of an application, and it claims to do this automatically.

It updates and discards versions of software without the administrator's intervention. This is possible through recognition of object differences. This capability appeals to Geschickter. "It focuses on the deltas in the environment," he says.

Although EDM doesn't offer the same capabilities as other products in this category, one analyst says Novadigm is doing a lot on the desktop. ▪

Malloy is Computerworld's assistant researcher.

In Depth

Cable modems. Phone companies. Seems as if everyone's
jockeying to take remote computing to the next level. With
no clear favorite, the whole field is

Wired to wire

By Steve Alexander

For information systems managers, one thing is certain: Telecommuter data traffic and the firewall problems that work-at-home employees pose will increase.

Whether cable modems will target home or business use initially is an open question. Analysts are divided. Peter Krasilovsky, a senior analyst at Arlen Communications, Inc., a market research firm in Bethesda, Md., says cable modems may make more sense for business applications than for residential use because direct fiber connections are more available to business.

But David Pangrac, director of Network Creation Services at Andersen Consulting in Chicago, disagrees. "The primary reason for cable modems is for residential use because it ties you to data networks from your home," he says.

Ed Lewis, marketing manager at Motorola, Inc.'s multimedia group in Arlington Heights, Ill., predicts the business market for cable modems will take off next year. "There is a lot of work be-

ing done behind the scenes. You'll see significant business use in 1997," he says.

Continental Cablevision, Inc. in Boston, the nation's third-largest cable television company, is running commercial trials in Exeter, N.H., where a private network links 30 physicians' offices with the local hospital. Each office is charged $300 per month. The company is also running extensive tests aimed at the home market.

Dave Fellows, senior vice president of engineering and technology at Continental, says two cable modem factions are competing in his company: one that favors rolling out business services first; the other, residential services.

The first group says business can afford a higher cost per month, that winning one corporate customer might result in 100 individual subscriptions and that IS help desks in corporations would solve many technical prob-

lems with cable modems without the intervention of the cable company, Fellows says. Residential advocates say that market is larger and avoids the biggest downside of the business market: corporate firewall problems.

Firefighting

The firewall problem is this: Corporate workers at home need to access their office applications as if they were inside the corporate firewall but without compromising the protection that a firewall provides. "This offers a different challenge in managing security and operating a firewall," Fellows says.

One solution is encryption. Another is what Fellows calls "IP tunneling," in which corporate routers send all traffic from telecommuters' Internet Protocol addresses to one IP address inside the corporate firewall, providing more

scrutiny over who gets inside.

How are the business trials going? Simon Doherty, an IS specialist who manages Windows NT and Unix workstations at Wharton Business School in Philadelphia, is participating in a cable modem trial run by Comcast Cable Communications, Inc. in Philadelphia. Doherty says the cable modem often saves him the 90-minute round-trip to work to deal with emergencies. The downside, he says, is that the upload speed has been slower than an Integrated Services Digital Network (ISDN) line would be — certainly not the 1.5M bit/sec. he was expecting. Downloads also are slower than he expected, about 1M bit/sec. rather than 6M bit/sec.

Doherty plans to try Asymmetric Digital Subscriber Line (ADSL) and other cable modem alternatives because he says he believes phone companies have higher reliability.

The telcos strike back

Competition for cable modems will come from telephone companies such as Bell Atlantic Co., which is conducting

trials with ADSL, a twisted-pair telephone line technology.

Beth Gage, an analyst at consulting firm TeleChoice, Inc. in Tulsa, Okla., says ADSL will be rolled out in 1997 and 1998. "However, if cable TV companies follow through with their 1997 installation projections, that could speed up what the phone companies do," she says.

Kamran Sistanizadeh, director of network systems engineering at Bell Atlantic Network Services in Arlington, Va., says his firm is conducting ADSL technical trials now and will run marketing trials in the fall for residential and small business service. Bell Atlantic customers will be able to receive data at 1.5M bit/sec. and to send data at 64K bit/sec.

Sistanizadeh says ADSL will offer customers a secure dedicated line, which he claims will provide higher quality service than the shared cable TV network a cable modem would use.

Fellows concedes that cable TV companies haven't historically been as dependable as telephone companies — in most cases, he says, because they weren't running fiber networks. But he says cable firms are upgrading their networks to provide fiber to neighborhood nodes and are installing network monitoring centers that watch for bit error rates, dropped packets and end-of-line signal performance. Although 70% or more of cable systems will need upgrades to offer cable modem service, the industry will accomplish that within three years, Fellows claims.

Fading in the stretch?

Both cable modems and ADSL have potential technical problems.

Pangrac cites electronic noise that can leak into the cable TV network

from loose connectors or improperly installed cable equipment in homes.

Hewlett-Packard Co.'s solution to the noise problem is a frequency-hopping technology that seeks the quietest channel. "The noise factor is not going to slow the rollout," says Casey Sheldon, HP's brand manager for interactive broadband products in Cupertino, Calif.

Krushinsky says there may be problem scaling up from initial cable modem trials, which often involve, about 100 users, to commercial systems that serve thousands. "What all the cable TV engineers say secretly is, 'Wait until you have a thousand users trying to download something; then you'll have big trouble,'" he says.

Fellows says scaling up will be a challenge, particularly because Continental hopes to have 1 million computers on its cable modem network within four years. But he says it can be done by sticking to existing data network and World Wide Web server standards.

The telephone companies' offerings aren't without drawbacks. Sistanizadeh acknowledges that the XDSL products (see box at right) have distance limitations: Users who are more than 15,000 to 18,000 feet from the phone company's central office won't be able to use those services. But he says the majority of Bell Atlantic's customers are within that distance.

It's unclear whether cable modems or telephone company alternatives will win the greatest market share. "It's too soon to say who is going to win," Sistanizadeh says. "I'm sure there are going to be market segments for cable modems and for ADSL." ∎

Alexander is a freelance writer in Minnesota.

Tout sheet

Here's the field in the remote-computing derby. Availability dates are according to Beth Gage, an analyst at consulting firm TeleChoice, Inc. in Tulsa, Okla.

Technology	Speed	Availability
Conventional dial-up modems	28.8K bit/sec.	Now
ISDN	64K to 128K bit/sec.	Now
Cable modems	Officially, up to 10M bit/sec. in both directions, but bottlenecks may reduce that to 1.2M to 5.5M bit/sec. Speeds in some early trials have been even slower.	More likely; more widespread business use expected in 1997 or 1998

XDSL: one of all the DSLs, the Digital Subscriber Line technologies that provide high-speed data and voice communications over twisted-pair lines. Here are the progeny:

Technology	Speed	Availability
ADSL (Asymmetric DSL)	Typically provides 1.5M bit/sec. to the user and 64K bit/sec. from the user. Provides voice and data simultaneously.	Trials now; limited commercial availability expected early next year.
HDSL (High-bit-rate DSL)	Typically provides 768K bit/sec. in both directions. This symmetric service handles either voice or data, but not both at once.	Technology is available today but isn't being marketed for Internet access or home offices. Rollout timing for those markets depends on phone companies.
SDSL (Symmetric DSL)	1.5M bit/sec. in both directions. Handles data and voice at the same time.	In trials, but likely to roll out a year later than ADSL.
VDSL (Very high DSL)	Expected to provide 25M to 50M bit/sec. downstream and 1.5M to 3M bit/sec. upstream, but it's still in development. Actual capacity will vary with quality of local phone lines.	Five to 10 years off. Works on copper wire for only 500 feet so must wait for the construction of more hybrid fiber coaxial systems.
RADSL (Rate Adaptive DSL)	This planned service would automatically and dynamically match its transmission speed to the modem with which it is communicating.	Probably not until late next year.

Programming pioneer

HBO's James Altucher is marrying IS skills with interactive television creativity to redefine the programmer.

By Leslie Goff

P rogramming is taking on a whole new meaning for some IS professionals working on World Wide Web development projects.

James Altucher, a systems analyst at Home Box Office, Inc. in New York, programmed the cable television network's Web site (www.hbo.com) and is the brains and brawn behind one of the site's key features, a program — that's "program" in the TV sense — called *Ill:am*.

Ill:am is reality TV on the Web. Altucher documents the unglamorous side of life on the streets of Manhattan, which around 3 a.m. begins to take on a surreal quality uniquely their own. As the off-camera interviewer of people who roam the night, he approaches total strangers to ask the burning question, "Why are you out at 3 a.m.?" Their responses, which tend to take many dramatic turns, are the heart of the show.

Altucher, who earned a bachelor's degree in computer science from Cornell University in 1989, is among a growing breed of information systems professionals who are bringing their personal interests, technical experience and project management skills to the creation of corporate Web sites.

As the producer of *Ill:am*, Altucher blends a background in interactive TV with Internet expertise. And he fosters an ongoing interest in the erratic and bizarre to explore how HBO's Web site can reflect the network's corporate — or on-air — identity, while offering its own intrinsic entertainment value.

Although he wears a producer's cap and works mainly for HBO Interactive Ventures — which is responsible for HBO's Web site and Internet — Altucher still reports to HBO's IS chief, Bruce Probst. He still works alongside fellow computer programmers. But he spends his days organizing shoots, editing tapes, transcribing interviews, posting material to the site and working on other HBO Web entertainment ventures, such as *Roadkill*, an upcoming show that will follow comedian Drew Feldman as he picks up hitchhikers on a cross-country trip.

"The development of a Web site has a strong IS orientation in terms of project management," Altucher says. "Transferring data between secure machines behind firewalls, determining what we can use on the site from the HBO databases — like schedules — and making backups of everything is all very IS-oriented."

Altucher already had experience with interactive TV before he joined HBO. He landed at the network in August 1994 partly because of *The Woggles*, a Dr. Seuss-style animated virtual reality environment he helped create as part of a team in Carnegie Mellon University's Oz Interactive Fiction program.

The role Altucher has assumed in HBO Interactive Ventures

The early morning — or the wee hours of Manhattan at 3 a.m. (top); the players on the set of *Ill:am* gathered around Stingy Lulu's Slaboory the drama (center); James Altucher interviews an inhabitant of Alphabet City (bottom right).

is unique, but not uncommon, according to Kevin Dowdell, a vice president at HBO. He sees a limited window of opportunity for other IS professionals to stake out unique Web development opportunities.

"In Web programming, in the content/entertainment sense, IS skills are especially important now because we are in the incipient phase of the technology," Dowdell says. "Just as in the early days of radio or TV, in the very early stages of a technology, the point isn't just to come up with good entertainment, but also how to best leverage the technology in the face of constraints. Since we are in early stages, we look for people with this combination of technical expertise and [creative] skill sets."

"This is a perfect time for me because I really feel the work is boosting my creative potential," Altucher says. "There's a lot of hidden creativity in IS departments that goes untapped." ■

On the prowl with Ill:am

Stingy Lulu's is quiet at 1 a.m. on a Friday. The dinner crowd is long gone, but the club crowd has yet to turn out. A small video crew is meeting at the East Village lounge in New York's seedy Alphabet City. Its assignment: Capture the mondo bizarro of Manhattan's sleepless landscape.

Between sips of red wine chased by coffee, the crew of *Ill:am* prepares to wander Alphabet City's narrow avenues in search of stories to tell. *Ill:am* is the World Wide Web equivalent of reality TV. The program depicts the nights and times of that unique brand of Manhattanite who is out and about at 3 a.m.

James Altucher organizes the shoot, manages the crew and acts as off-camera interviewer. Just around the corner from Stingy Lulu's, he stops his first subject: 17-year-old Alice, with pierced lip and dreadlocks. "Hi, we're doing a shoot for HBO. Could we ask you what you're doing out at 3 a.m.?"

He is completely undiscriminating in choosing his subjects. At 3 a.m., anyone is likely to make for a good chat, from the documentary film producer living with her subject family, to the young pool shark on her way home from a bar, to the interracial gay couple, to the three young Spaniards trying to soak up as much of New York as possible in four days.

Later, Altucher will transcribe the audio tapes, edit the videotapes, lay out the text and graphics, set it all up in Hypertext Markup Language and post an other new episode to the Web site.

Not long after being threatened by a punk with a mohawk — the crew had panned the camera in his direction — the group decides to call it a night. It's nearly 5 a.m. They pile into a cab and end up in the kinder, gentler West Village. Before ducking into the Greenwich Cafe, where raging disco music will be the backdrop for drinks and breakfast, they interview a well-heeled man in a red Porsche. After a long night out, Altucher is on his way home, too.

— *Leslie Goff*

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Marketplace

Four questions
to ask before choosing a
Web browser

By Sue Hildreth

With the outcome of the browser wars still uncertain, how do you decide whether to go with Netscape Communications Corp.'s Navigator, Microsoft Corp.'s Internet Explorer or some other browser? *Computerworld* asked four Internet analysts for advice on the subject. Here's what they say an information systems manager should ask before choosing a corporate World Wide Web browser.

What range of functions can a browser perform?

Most browsers offer basic features such as support for backgrounds and tables, the ability to view a Web page's Hypertext Markup Language source code and a way to create hotlists of favorite places. But not all of them do, so check a prospective browser to make sure it isn't missing a feature that your users will consider crucial.

On a broader scale, take an inventory of all the activities your company's browser will be expected to support — electronic mail, Internet browsing, online sales or intranet access to a corporate database. "To browse to the applications you'll need it for," advises Brad Meinert, director for Internet programs at Input, Inc., a market research firm in Mountain View, Calif.

"Sometimes a company has just a few things it needs to do, and it needs a browser that does them very well," observes Rich Spence, technology analyst at KRON television in San Francisco and a former analyst at Dataquest.

"For instance, if your main goal is to provide intranet access to an Oracle database, then Oracle Corp.'s PowerBrowser is a logical choice because it was designed with that in mind.

How easy is it to get employees to switch to another browser?

If employees already use a browser, you'll have to decide if it's worth the effort to force a change. "Many a CIO has discovered that their company has defaulted to Netscape by virtue of the fact that the employees have already downloaded it to their desktops," observes John Robb, Internet analyst at Forrester Research, Inc. in Cambridge, Mass. He says it's typically difficult to change browsers in midstream. "People personalize their browsers — they accumulate things like hot lists and plug-ins. So a CIO attempting to switch browsers will encounter a good deal of consternation within the ranks," Robb says.

Also, find out if your marketing department already has a corporate Web page up and running on the Internet. If so, not only has it chosen a browser, but it has also defined many of the features any other corporatewide browser will need to have — such as the ability to handle frames or video files.

Which platforms does your browser need to support?

Not all browser vendors are constantly working to provide support for multiple platforms, from DOS to Unix, you still need to check that your browser of choice can run on all the platforms you use. Microsoft, for example, has versions of Explorer for Macintosh and for Windows 3.1, Windows 95 and Windows NT, but it doesn't yet offer a Unix version.

What do I need to know about vendor support?

"Choose a vendor that has good customer support and that looks like it's going to be around five years from now," Meinert advises.

Support is also a reason to avoid shareware or a beta-test browser. "It's always better to go with commercial products because there's somebody you can point a finger at if something goes wrong," Robb says.

"IS managers should be familiar with their browser's beta version, but they shouldn't be releasing it to the employees, or they're going to be spending a lot of time on support," says Tim Sloane, director of messaging at Aberdeen Group, Inc., a consultancy in Boston.

Hildreth is a freelance writer in Hyde Park, Mass.

Finance & Investing

Someone to watch over me

*In the perilous early stages of a
high-tech start-up, it helps to have
an angel in your pocket*

Panoptic Systems' J. A. Piscopo: *You must be
willing to deal with companies that are always flirting with bankruptcy*

While some companies rocket toward lucrative initial public offerings with the backing of well-heeled venture capitalists, the vast majority of start-ups must struggle along with minimal resources.

However, a few lucky ones find an "angel," a private investor who can provide the funds they need to move their businesses into the fast lane. Such angels pony up between $10,000 and a few hundred thousand dollars in early-stage money, along with lots of advice and hand-holding.

Angels, many of whom became wealthy by starting their own high-tech companies, can also lend credibility to start-ups, says Ralph Wagner, an angel in Wellesley, Mass. Indeed, it is in their role as active investors, taking positions on boards of directors or offering informal consulting, that angels provide some of their greatest value. And it is a two-way street. Angels say they are usually drawn to investments by the chance to share their insights and help give direction to a new enterprise — and by how appealing the company's goals are.

Wagner, who made his money as a software entrepreneur, usually invests in software firms. His background includes sales jobs for IBM in the 1950s and '50s and consulting work for Arthur D. Little, Inc. He also founded one of the first direct sales companies that offered IBM microcomputers to corporate customers.

In 1985, after selling his successful chain of computer stores, he began to invest in early-stage software and hardware companies, using his knowledge of the industry to offer experienced insights to his fledgling companies.

"I'm looking for people who are leaving well-paying jobs to pursue an idea," he explains. He is attracted to investments that "look like fun," and yet he wants to get in early enough to "get meaningful value — otherwise I'd be better off investing in Coca Cola."

Angels not only need to be good entrepreneurs, but they also need nerves of steel, according to J. A. Piscopo in Oak Brook, Ill. In 1989, Piscopo founded Panophic Systems, one of the industry's pioneer software firms. It was acquired by Computer Associates International, Inc. in 1992.

"You must be willing to deal with companies that are always flirting with bankruptcy," says Piscopo, who has invested in a variety of companies over the past 10 years. "That seems very ordinary to me because I've been there myself, but to someone accustomed to the stock market, it would be a cause for panic."

Similarly, picking investments is an art rather than a science, Piscopo says. "There are none of the conventional kinds of valuations you might use on a Fortune 500 company."

The uniqueness of the product and the quality of the team are part of what Piscopo considers. He also looks for a solid business plan. And before he forks over any cash, he says he checks to see whether that plan provides for enough capital to survive if things go "a little bit wrong."

Big wins

But most of the time his investments have gone more than a little bit right. "With my own company, as founder, I earned 850 times my original investment. And even with the other companies I have invested in, I usually aim for 10 to 15 times my investment," Piscopo explains. On a few occasions, though, he admits, "I've lost everything."

Finding potential deals is no problem for these angels. The deals find him, Piscopo says. Most come through business associates or former employees, and most turn out to be of little interest, he says.

But how do less well-connected entrepreneurs find an angel? Thanks to several matchmaking organizations, the careful courtship of capital and companies goes on with or without the old-boy network. Betty Kadis is interim director of the Technology Capital Network — the oldest such group — that operates under the auspices of the MIT Enterprise Forum in Cambridge, Mass.

Kadis says a shift by venture capital firms toward bigger deals has left a gap that angels are eager to fill. However, unlike venture firms, most angels are comfortable waiting five to 10 years for payback, she says.

Angels may be taking on more importance in helping start-ups now that established venture capital firms have set their sights on larger deals, suggested a recent article in *Venture Capital Journal* in New York.

And while figures on the scale of angel investing are far from reliable — because angels are so adept at avoiding the limelight — as many as 250,000 individual angels may be responsible for up to $10 billion to $20 billion in investments annually. That is several times the value of investments by traditional venture capital firms.

Patience may be the final requirement for successful angel investing. Angel Bob McCray recalls that one investor in his firm had to wait 20 years to get a payback. However, the payback was $12 million on an initial investment of $5,000. McCray says he tries to remember that as he works with small companies, but he still prods them a bit. Companies that manage to become profitable in a shorter time — say one or two years — are allowed to pay him back at a much lower rate of return. "I like to structure things so the entrepreneur will still have a chance of making lots of money for himself," McCray says.

BY ALAN R. EARLS

Earls is a freelance writer in Franklin, Mass.

The Week in Stocks

Gainers   Losers

Industry Almanac

Gateway 2000 branches out

Recent quarterly sales of PCs show a 12% increase over the same quarter a year ago, according to a report from Dataquest in San Jose, Calif. And Gateway 2000, Inc. (Nasdaq:GATE) is one of the leaders of the pack.

Gateway's PC shipments rose 48% over the same quarter last year. Since January, Gateway has tried to change its image from a single-market, single-product company to a worldwide marketer of varied PC devices. Analysts have approved.

Although Gateway's direct-sales approach has served it well in the past, the North Sioux City, S.D., firm is branching out. In the past year, it has expanded into markets in Europe and Asia. It introduced the Solo 2100 line of notebook PCs and rolled out Gateway Destination, a large high-priced PC/television.

This surge into new markets pleased analysts. "We're very bullish on Gateway, and we think the Destination product shows true innovation," says Megan Robertson, a market analyst at Smith Barney Shearson, Inc. in New York. Robertson says Gateway's direct-marketing model lets the company convince inventory more precisely and offer better pricing. She expects the stock to rise to $50 in the next 12 months.

Gateway's venture into foreign markets will be very beneficial, says Wendy Abramowitz, an analyst at Argus Research Corp. in New York. "They have such good administrative systems that as they continue to expand internationally, their already-strong revenues will grow even more." Abramowitz says she expects Gateway's stock to rise to about $50 within the next year. —Stewart Deck

Gateway to riches?

After a hard winter, Gateway 2000's stock price has slowly risen to new heights

How to contact Computerworld editors

Companies in this issue

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Rmon

But fully implementing Rmon to track performance trends can help administrators spot emerging problems before they impact vital business applications.

"Vendors whine that end users call Rmon an absolute necessity in their proposals, but six months to a year later, those buyers have never turned it on to collect and correlate the information it can provide," said Tim Wilson, management analyst at Decisys, Inc., a network consultancy in Sterling, Va.

Rmon shipments should double this year to $744 million, even though usage appears to remain light, said Brian Burba, an analyst at International Data Corp. in Framingham, Mass.

"Rmon is becoming a check-off item, a standard function like support for the Simple Network Management Protocol," Burba said. "But there's a lot of 'dark Rmon' out there that just hasn't been implemented." One reason is the complexity of instrumenting an entire network, he said.

Performance is another concern. "Rmon comes at a price in CPU cycles and memory," said Barry Stanton, a software engineer at Advanced Micro Devices, Inc. in Sunnyvale, Calif.

Stanton said he prefers to use stand-alone Rmon probes to track critical segments rather than embedded modules. So do

administrators at Chevron Information Technology Co. in San Ramon, Calif. During an Rmon rollout, some internetworking gear, which then slows the flow of business traffic, they said.

Even worse, "Rmon can get turned off just when you need it most — as utilization gets high," said Darrell Epps, communications engineer at Chevron. That is because Rmon is a low-priority process when embedded in some hubs, he said.

A third factor in the reluctance of the majority of organizations lack "enough network gurus to go around," Howard said.

At Baxter HealthCare Corp. in Deerfield, Ill., some hubs contain Rmon, "but we haven't turned it on because there's no body available on staff to watch the reports," said Steve Tindall, project manager for LANs and infrastructure.

Like protocol analyzers, many Rmon tools sit unused until they are needed for troubleshooting, said Lou Steinberg, president of NetOps Corp., a network consultancy in New Fairfield, Conn.

"Users won't know Rmon turned on to track network performance until it gets better integrated with their daily network management tools," he said.

It took an overhaul, but America II Group, Inc. in St. Petersburg, Fla., now tracks traffic full time. "Rmon isn't just an autonomy tool," said Chief Information Officer Michael Matticone. "It can help take control over your network."

Conserving internet Protocol (IP) addresses

Cisco, 3Com improve 'net links

By Bob Wallace

The tidal wave of companies and remote users seeking Internet access is forcing hub and router vendors to deliver offerings that improve links to the Internet.

3Com Corp. and Cisco Systems, Inc. will announce this week products that ease Internet access and conserve a limited resource — Internet Protocol (IP) addresses.

With 3Com's OfficeConnect Internet Gateway, information systems managers can let 50 users on a Novell, Inc. IPX NetWare LAN share one IP address. And it converts IPX traffic to IP, so NetWare users don't need $100 to $200 IP software on their PCs.

This eliminates the need to address an infrequent Internet users, and it shields the NetWare server from hackers.

"It'd work very well for our small offices, which have NetWare LANs, though most of the rest of the company is using IP," explained Bill Riciwell, corporate networking strategist at R.R. Donnelley & Sons, a major printing firm based in Chicago.

Jeff Fritz, a telecommunications engineer at the University of West Virginia in Morgantown, agreed. "Anytime you can run fewer protocol stacks on a PC, you save money, memory and processor power," he said. "IPX-to-IP gateway products like this will be very popular with IPX shops."

Cisco's actions

For its part, sources say, Cisco will announce this week an IP address conservation and administration capability called Dynamic Host Control Protocol (DHCP) for at least one of its Internet products.

Before DHCP, network administrators manually assigned a permanent IP address to every user. Now administrators can deploy DHCP to manage a pool of available IP addresses — akin to a fleet of rental cars — and automatically lease the addresses to end users as needed.

Once a wide-area network deployment is complete, DHCP automatically frees up the IP addresses for the next user.

And 3Com too would will be-

come the first major Internetworking vendor to avoid steep permanent Integrated Services Digital Network (ISDN) usage charges by using channels only when they are really needed.

Today, devices at both ends of an ISDN line can't communicate with each other intelligently, and as a result, often call up more B channels than are actually needed.

This capability, called Bandwidth Allocation Control Protocol, will be approved as 3Com's next software upgrade for its ISDN routers and in remote access servers, which are available now.

"This capability is an absolute requirement for us because it's too costly [with today's schemes] to keep multiple B channels up long," said Duane Rochelle, an information technology engineer in the network design and telecommunications group at Entergy Services, Inc., a Gretna, La., power company.

NT workstations

analyst at Technology Business Research, Inc. in Hampton, N.H.

These new systems cost about $5,000, which is less than half the cost of a comparable Unix-based system.

But Garden warns that the new workstations have limits. Unix boxes still offer far more applications than Windows NT systems, especially in the high-end technical and engineering areas. For example, there still aren't enough applications to support power users who run multiple programs.

And Pentium Pro systems can't match the computational horsepower of some systems from Sun Microsystems, Inc. or Sili-

con Graphics, Inc. "NT boxes are going to be a real legion of doom for low-end [Unix workstation] systems," said James Greene, an analyst at Summit Strategies, Inc. in Boston. "But no one is going to be using NT to do their geographic imaging explorations."

But some shops are starting to bite. "With the kinds of capabilities these systems have, it is almost as if they are giving them away," said Gary Davis, president of Animation House, Inc. in Evansville, Ind.

Animation House, a heavy technical workstation shop, recently bought a Pentium Pro-based system for $5,000 from Gateway 2000, Inc. Davis estimates the system would have cost him more than four times as much from a Unix vendor. He uses the system for digital video and imaging applications.

"It is becoming pretty evident that these boxes are capable of handling resource-intensive applications that used to require a higher-end workstation previously," said Eric Singleton, director of information systems at AlliedSignal Technical Service Corp. in Columbia, Md. As a result, when it comes time for them to upgrade their engineering workstations, they "will consider looking at these new offerings," he said.

Follow the leader

HP is the first major vendor to formally announce a Pentium Pro personal workstation with these kinds of graphics capabilities, but several other vendors are expected to follow suit before year's end. Digital Equipment Corp., for instance, is prepping an early September release, and desktop leader Compaq Computer Corp. recently

formed a separate workstation division. Compaq is expected to announce products in the fourth quarter.

What is really going to set these systems apart from other Intel-based workstations is the relatively sophisticated graphics capabilities they support, analysts said. HP, for instance, is pairing its HP Visualize Unix workstation graphics technology to Windows NT while Digital is porting its PowerStorm graphics to NT. Others, such as Compaq, are forming alliances with workstation vendors to do the same thing.

As a result, these "NT-based workstations clearly can do the job for a lot of the engineering design work out there," said Rich Partridge, an analyst at D.H. Brown Associates, Inc. in Port Chester, N.Y.

Senior editor Bob Francis contributed to this story.

Rmon

But fully implementing Rmon to track performance trends can help administrators spot emerging problems before they impact vital business applications.

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- Like product analyzers, many Rmon tools sit unused until they are needed for troubleshooting, said Lou Steinberg, president at NetOps Corp., a network consultancy in New Fairfield, Conn.

"Users won't leave Rmon turned on to track network performance until it gets better integrated with their daily network management tools," he said.

It took an overhaul, but American II Group, Inc. in St. Petersburg, Fla., now tracks traffic full-time. "Rmon isn't just an appliance tool," said Chief Information Officer Michael Mulleavy. "It can help take control over your network."

Cisco, 3Com improve 'net links

By Bob Wallace

The tidal wave of companies and remote users seeking Internet access is forcing hub and router vendors to deliver offerings that improve links to the Internet.

3Com Corp. and Cisco Systems, Inc. will announce this week products that ease Internet access and conserve a limited resource — Internet Protocol (IP) addresses.

With 3Com's OfficeConnect Internet Gateway, information systems managers can let 50 users on a Novell, Inc. IPX NetWare LAN share one IP address. And it conserves IPX traffic to IP so NetWare users don't need $100 to $200 IP software on their PCs.

This eliminates the waste of addresses on infrequent Internet users, and it shields the NetWare server from hackers.

"It'd work very well for our small offices, which have NetWare LANs, though most of the rest of the company is using IP," explained Bill Rochell, corporate networking strategist at R.R. Donnelley & Sons, a major printing firm based in Chicago.

Jeff Fritz, a telecommunications engineer at the University of West Virginia in Morgantown, agreed. "Anytime you can run fewer protocol stacks on a PC, you save money, memory and processor power," he said. "IPX-to-IP gateway products like this will be very popular with IPX shops."

Cisco's actions

For its part, sources say, Cisco will announce this week an IP address conservation and administration capability called Dynamic Host Control Protocol (DHCP) for at least one of its Internet products.

Before DHCP, network administrators manually assigned a permanent IP address to every user. Now administrators can deploy DHCP to manage a pool of available IP addresses — akin to a fleet of rental cars — and automatically lease the addresses to end users as needed.

Once a week-long network transmission is complete, DHCP automatically frees up the IP address for the next user.

And 3Com this week will be-

come the first major internetworking vendor to avoid steep per-minute Integrated Services Digital Network (ISDN) usage charges by using channels only when they are really needed.

Today, devices at both ends of an ISDN line can't communicate with each other intelligently, and as a result, often end up on a carrier's B channels than are actually needed.

This capability, called Bandwidth Allocation Control Protocol, will be supported in 3Com's next software upgrade for its ISDN routers and to remote access servers, which are available now.

"This capability is an absolute requirement for us because it's too costly [with today's schemes] to keep multiple B channels up long," said Duane Rochelle, an information technology supervisor at the network design and telecommunications group at Entergy Services, Inc., a Gretna, La., power company.

NT workstations

analyst at Technology Business Research, Inc. in Hampton, N.H.

These new systems cost about $5,500, which is less than half the cost of a comparable Unix-based system.

But Garden warns that the new workstations have limits. Unix boxes still offer far more applications than Windows NT systems, especially in the high-end technical and engineering arena. For example, there still aren't enough applications to support power users who run multiple programs.

And Pentium Pro systems can't match the computational horsepower of some systems from Sun Microsystems, Inc. or Sili-

con Graphics, Inc. "NT boxes are going to be a real legion of doom for low-end [Unix workstation] systems," said James Greene, an analyst at Summit Strategies, Inc. in Boston. "But no one is going to be using NT to do their geographic imaging explorations."

But some shops are starting to bite. "With the kinds of capabilities these systems have, it is almost as if they are giving them away," said Gary Davis, president of Animation House, Inc. in Evansville, Ind.

Animation House, a heavy technical workstation shop, recently bought a Pentium Pro-based system for $5,600 from Gateway 2000, Inc. Davis estimates the system would have cost him more than four times as much from a Unix vendor. He uses the system for digital video and imaging applications.

"It is becoming pretty evident that these boxes are capable of handling resource-intensive applications that used to require a higher-end workstation previously," said Eric Singleton, director of information systems at AlliedSignal Technical Service Corp. in Columbia, Md. As a result, when it comes time for them to upgrade their engineering workstations, they "will consider looking at these new offerings," he said.

Follow the leader

HP is the first major vendor to formally announce a Pentium Pro personal workstation with these kinds of graphics capabilities, but several other vendors are expected to follow suit before year's end. Digital Equipment Corp., for instance, is prepping an early September release, and desktop leader Compaq Computer Corp. recently

formed a separate workstation division. Compaq is expected to announce products in the fourth quarter.

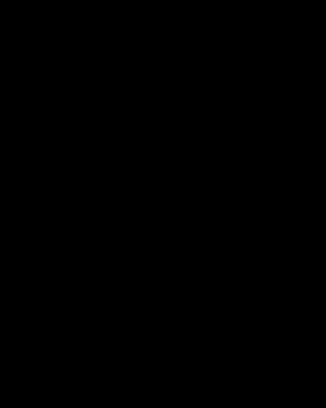What is really going to set these systems apart from other Intel-based workstations is the relatively sophisticated graphics capabilities they support, analysts said. HP, for instance, is porting its HP Visualize Unix workstation graphics technology to Windows NT, while Digital is porting its PowerStorm graphics to NT. Others, such as Compaq, are forming alliances with workstation vendors to do the same.

As a result, these "NT-based workstations clearly can do the job for a lot of the engineering design work out there," said Rich Partridge, an analyst at D.H. Brown Associates, Inc. in Port Chester, N.Y.

Hey, Microsoft: Can you spare a few execs?

If Microsoft really wants to help Apple, I've got an idea.

You may have heard that Microsoft has been secretly running a group in San Jose, Calif. It has hired people to build Macintosh Internet software and handed money to small developers who are willing to do the same. Microsoft's goal is reportedly to build Apple's market share, partly because if Apple doesn't survive, Microsoft could fall under the watchful gaze of the U.S. Department of Justice. Besides, Microsoft still has a nice business selling Office for the Macintosh.

But if Microsoft is really serious about helping Apple, I know how to accomplish it: Send them Steve Ballmer. As Microsoft's executive vice president of sales and support and all-around No. 2, Ballmer is just the person to turn Apple around. Ballmer is the gold standard of enthusiasm, could sell Macintoshes to even the most devoted Windows shop and is generally regarded as the sharpest marketer in the industry.

Of course, he'd have to replace CEO Gilbert F. Amelio and Chief Technology Officer Ellen Hancock — Apple's dynamic duo of cluelessness — but their tenure is probably limited anyway.

Marco Landi, who was recently named Apple chief operating officer, is a keeper, though. He's bright, says the right things, and seems to understand the business challenges, if not the product challenges, Apple faces.

To get the Apple product organization in line, another loaner executive is required. Microsoft Group Vice President Nathan Myhrvold, who runs the applications and content organization, ought to be able to bring some spark to Apple's beleaguered R&D campus. Myhrvold is at least as smart as Bill Gates on technical matters, although he isn't the all-arounder Gates has become.

I know the idea of Microsoft executives taking over Apple sounds crazy, but Apple isn't capable of saving itself anymore. And when outsiders try to help, Apple is so huge and disorganized that no one seems able to act. Amelio's record so far consists of doing things any breathing person would do when confronted with Apple's problems. Nothing more, nothing less. Hancock is an executive most closely associated with the bad old days at IBM, hardly the reassurance the Apple community needs.

It sounds funny that Microsoft would want to save Apple, given the history of acrimony between the two companies. But the battling was mostly Apple vs. Microsoft. It was Apple's holier-than-thou culture and the fact that Microsoft has always made truckloads of money selling Macintosh software and Macintosh-like software for the PC.

This isn't the first time Microsoft has tried to help Apple. Microsoft Group Vice President Pete Higgins says he and Bill Gates tried to persuade Apple to license the Mac OS many years ago, but then-CEO John Sculley and his technical chief, Jean-Louis Gassee, wanted no part of it.

So, yes, my proposal is a bit radical. And although some people will raise legal questions, keeping Apple alive is in Microsoft's best interest — and ours.

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One year later, what was the fuss?

It was a year ago that Windows 95 was launched, and one wonders at this point what all the hoopla was about.

Desktop operating systems had been rendered a secondary technology by the time Windows 95 appeared, even if few of us recognized it at the time. The Internet was well on its way to becoming a mass movement, but many of us joined a late-night watch for the first sightings of Windows 95 like the beholders of Halley's comet.

If Microsoft were staging a Windows 96 launch this week, would it buy the *London Times* for a day or pay $12 million for the privilege of playing The Rolling Stones' "Start Me Up?" That's not what an Internet company does. Instead, it promises to supply regular upgrades as if each advance is a routine step instead of a giant leap forward. What a difference a year makes.

The emergence of the Internet and platform-neutral devices such as Netscape's Navigator and Sun's Java neutralize the impact of the operating system. If IBM and Apple want to keep developing OS/2 and the Mac OS, they will get their users on to the 'net just as effectively as Microsoft. If the network is the computer, all users become equally empowered once they gain access to the Internet. It makes another cultural event like the launch of Windows 95 seem impossible.

* * *

Speaking of empowerment, I've been impressed by the second chance that Apple is getting from the Internet, thanks to the popularity of the Macintosh with graphic artists and World Wide Web page authors.

But to sustain this second chance, Apple will have to move rapidly to improve the transaction processing and database management capabilities of its operating system and hardware. In addition to generating content, Apple platforms serve as hosts for first-time Web pages. As traffic goes up and the number of things being done on a site escalate, Apple-biased Web masters are likely to find they need to move to Windows NT or Unix.

Right now, I would say that Apple is getting bailed out by the popularity of the Macintosh as a content authoring system, and somewhere between 2% and 20% of the time it is supplying the server hardware, too.

Estimating just how widely the Mac and its clones are used on the 'net is risky. Researchers at the University of Georgia launched a survey of Web sites that found 20% ran Apple hardware.

An outfit called Netcraft Ltd. in Bath, England, plugs Internet servers with its Web crawler and tabulates the results. It gives Apple less than 2% of Web servers. I would peg the figure at 15% to 17%, counting many small, noncommercial sites. So what if Apple isn't the main carrier of electronic commerce? The Web has temporarily bailed out the company.

In the end, you have to ask whether Apple can sustain its present strong position. To its clever, multimedia-oriented Macintoshes function adequately as Web servers? I don't think so, not as a high-transaction bank. Can its Workgroup Servers pick up the slack? I doubt they can. It into the corporate network—well enough to use legacy databases.

But no one anticipated Apple would reach such a position of strength. There's no need to attribute it to brilliant strategy or adroit Internet product development. With focus and innovation, however, Apple could convert its good luck into longer-term strength.

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alt.cw

COMPUTERS MOVIES

The following observations about Hollywood's depiction of computers are bouncing around the Internet (original author unknown):

Word processors never display a cursor. You never have to use a space bar when typing long sentences. All monitors display inch-high characters.

Government computers have either easy-to-understand graphical interfaces or incredibly powerful text shells that correctly understand and execute commands typed in plain English.

You can get any information you want by typing "access all of the secret files" on any keyboard. Likewise, you can infect any computer by typing "upload virus."

All computers are connected. You can access information on the villain's desktop computer even if it's turned off.

Powerful computers beep whenever you press a key or the screen changes. *Really* advanced systems also emulate the sound of a dot-matrix printer.

SCREENS ARE SO BRIGHT THEY PROJECT THEMSELVES ONTO THE USER'S FACE

All computer panels have thousands of volts and flash pots just beneath the surface. Malfunctions are indicated by a bright flash, a puff of smoke, a shower of sparks and an explosion that forces the user backward.

Users typing away on a computer will turn it off without saving the data.

A hacker can get into the most sensitive computer in the world before intermission and guess the secret password in two tries.

Complex calculations and loading of huge amounts of data are accomplished in less than three seconds. Movie modems transmit data at the speed of 2G lite/sec.

No matter what kind of computer disk it is, it's readable by any system it's put into.

Letter from Vegas

More than 700 self-described hackers, phreakers and crackers attended the Defcon IV annual computer hackers conference in Las Vegas last month. Attendance was up 50% from last year.

Who are these people? What do they want? For one thing, hackers are getting older. The average age is 6-something, was 27, up from 20 last year. Females comprised 4% of attendees, up from 1% last year.

Hacker motivations run the gamut. Some crackers said they just love the challenge. Others were electronic pranksters who use a mouse like a spray-paint can, tagging systems to show their prowess. And then there were the Unabomber types who harbor darker resentments. One of the scarier T-shirt slogans: "Practical Unix Terrorist."

So what are their next targets? With a prejudice against anything that makes money for Bill Gates (referred to as The Evil One), hackers have begun serious work finding holes in Windows NT. Meanwhile, Java was called woefully insecure and "a good virus propagation mechanism."

The good news is that security experts say most hacking could be prevented if companies just used the security tools and techniques already available.

— *Submitted by Tommy Ward, Digital Pathways (www.digpath.com)*

We put a new wrinkle on things

Wanna get a shirt like this?

Losing its religion . . .

Oracle plans to give Windows NT a big wet kiss at an NT-related intranet conference in San Francisco this week. Oracle hasn't exactly been ignoring Microsoft's rival to Unix; nearly 25% of last year's NT database sales went into Oracle's coffers, according to International Data Corp. But Oracle CEO Larry Ellison's propensity for Microsoft bashing made it politically incorrect to make much noise about NT at Oracle. No more, insiders said. Oracle this week will announce that it's putting Windows NT on the same development pedestal as Unix and creating a 150-person sales unit devoted to NT. Plans for porting more of its products to NT will also be spelled out.

. . . and sleeping with the enemy

Oracle also is mulling the idea of getting into the data warehouse consulting business, including projects that would involve the R/3 software of applications rival SAP AG. Because of the rivalry and a lack of in-house R/3 expertise, a full jump into the SAP applications consulting market isn't in the cards any time soon, said one Oracle official. But data warehousing is a more likely scenario, even if R/3 is what will be warehoused.

Electronic tit for tat

The battleground between Netscape and Microsoft now includes E-mail. First, Netscape vice president of engineering Rick Schell sent a message to Microsoft to complain that Netscape wasn't receiving timely information from Microsoft about its operating systems. Last week, Paul Maritz, a group vice president at Microsoft, wrote to Schell that Microsoft "provided a lot of help." Then Maritz accused Netscape of not supporting Microsoft in efforts to make products from the firms work together. And for good measure, Maritz added another three pages of accusations about Netscape products not being "open."

Andersen to share the risk

For many users, the very mention of Andersen Consulting conjures up an image of legions of consultants who bill on a time-and-materials basis for work that somehow always seems to increase over the course of a project. Now Andersen wants to change that, especially when it involves SAP R/3 implementation projects. At this week's SAP user conference in Philadelphia, Andersen will announce what one source close to the firm called a "risk-sharing" pricing scheme. Under this scheme, consulting fees will be set up front. That way, users will know exactly what they're paying for. What a concept!

Unclogging the 'net

A Washington-based outfit called Delta Tech has unveiled software designed to reduce the size of large file transfers over the Internet, Update It compares original files with updated files and sends 'net users the difference.

Ascend plans product blast

Ascend Communications, a leading provider of remote access servers, has confirmed plans to announce its new high-end product, known as TNT in analyst circles, next week. TNT will be the first remote access server to support a 45M bit/sec. wide-area network line.

Last week, a New Jersey superintendent had to explain to the school board why officials paid a 16-year-old hacker $875 to break in to its computer system. During the summer, some graduates needed transcripts for college applications. But no one from their high school was available to retrieve the records. So a computer consultant recommended the teen, who was able to bypass the system's password protection. If you've had one of those days or heard a cool rumor, tell us about it. Contact Computerworld's news editor Patricia Keefe at patricia_keefe@cw.com or at (508) 820-8183.

Dear Louise

DEAR LOUISE: My son-in-law is the kind of person who keeps dropping by without calling first. Then he won't leave. He's a nice guy—some kind of computer manager—but he won't stop blabbing. Night after night, it's "distributed environments," and "legacy systems" and "networked computing." He's obviously troubled and looking for answers, but I can't help. I'm in laundromats. How do I get my life back?

LOSING MY PATIENCE

DEAR LOSING: Be gentle, but be honest. Your son-in-law needs serious help. If you're not up to becoming an overnight expert in his field, try ta___.___om.com/is/enterprise/. There he'll find instant access to all kinds of information about how other companies dealt with similar problems and found ways to run their businesses better. Or try earplugs.

DEAR LOUISE: I am a pro___ional with years of experie___ ___ when I read to my an___

INCREASE YOUR
PRODUCTIVITY
WITHOUT
CAFFEINE
OR OTHER
ARTIFICIAL
STIMULANTS

BY DR. LARRY LARSON

OR